

Europe

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The past year saw steady U.S. reengagement on European defense. A proposed large-scale withdrawal of troops from Germany was cancelled; an important agreement on enhanced defense cooperation was signed with Poland; an increased focus on Arctic security came more clearly into view; and investments in exercises, infrastructure, and rotational deployments continued. A poorly planned and executed withdrawal from Afghanistan in August tarnished U.S. credibility. European allies remain upset over a lack of U.S. consultation and communication as well as ongoing downstream impact.

NATO underwent a strategic reflection process and continues to operationalize new decisions, exercises, and structures to bolster collective defense and address the emerging challenges of an evolving security landscape. The Wuhan coronavirus pandemic affected defense exercises, making it necessary to repurpose military resources for pandemic response. It also showcased new propaganda vectors to be used by adversaries but did not affect NATO's collective defense posture.

Admiral Robert Burke, Commander of U.S. Naval Forces Europe, U.S. Naval Forces Africa, and Allied Joint Forces Command Naples has described the European and African theaters as “the forefront of great power competition.”²¹ External threats to European security include the continued risk of Russian aggression toward the eastern states of NATO, Russian activity in the Arctic, a growing Russian presence in the Mediterranean theater, and Russian

efforts to destabilize Western cohesion. In addition, the threat posed by Chinese investments, technology, and propaganda efforts to the transatlantic alliance have begun to move toward center stage.

The 50 countries in the U.S. European Command (USEUCOM) area of responsibility include approximately one-fifth of the world's population, over 10 million square miles of land, and 13 million square miles of ocean. Some of America's oldest (France) and closest (the United Kingdom) allies are found in Europe. The U.S. and Europe share a strong commitment to the rule of law, human rights, free markets, and democracy. During the 20th century, millions of Americans fought alongside European allies in defense of these shared ideals—the foundations on which America was built.

America's economic ties to the region are likewise important. A stable, secure, and economically viable Europe is in America's economic interest. For more than 70 years, the U.S. military presence has contributed to regional security and stability, and both Europeans and Americans have benefited economically. The member states of the European Union (EU), along with the United States, account for approximately half of the global economy, and the U.S. and EU member countries are generally each other's principal trading partners.

Europe is also important to the U.S. because of its geographical proximity to some of the world's most dangerous and contested regions. From the eastern Atlantic Ocean to the Middle

East, up to the Caucasus through Russia, and into the Arctic, Europe is enveloped by an arc of instability. The European region also has some of the world's most vital shipping lanes, energy resources, and trade choke points.

European basing allows U.S. forces to respond robustly and quickly to challenges to U.S. economic and security interests in and near the region. Russian naval activity in the North Atlantic and Arctic has necessitated a renewed focus on regional command and control and has led to increased operations by U.S. and allied air and naval assets in the Arctic, and Russia's strengthened position in Syria has led to a resurgence of Russian activity in the Mediterranean that has contributed to "congested" conditions.²

Speaking at an Atlantic Council meeting in March 2019, U.S. Joint Chiefs of Staff Chairman General Joseph Dunford explained that the U.S. has two key advantages over adversaries: "our network of allies and partners, and the ability to project power where and when necessary to advance our national interest."³ Nowhere is the value of allies and U.S. basing more apparent than it is in the European operating environment.

U.S. Reinvestment in Europe. Russia's continued aggression has caused the U.S. to reinvest in military capabilities on the continent. In April 2014, the U.S. launched Operation Atlantic Resolve (OAR), a series of actions meant to reassure U.S. allies in Europe, particularly those bordering Russia. Under OAR and funded through the European Deterrence Initiative (EDI), the U.S. has increased its forward presence in Europe (approximately 6,000 soldiers take part in OAR missions and training at any one time across 19 nations);⁴ invested in European basing infrastructure and in prepositioned stocks and equipment and supplies; engaged in enhanced multinational training exercises; and negotiated agreements for increased cooperation with NATO allies.

European Deterrence Initiative. Despite the Trump Administration's proposal to reduce U.S. force levels in Europe, its FY 2021 request for the EDI, although less than the \$6

billion requested in FY 2020 and the \$6.5 billion requested in FY 2019, was still \$4.5 billion.⁵ In FY 2020, EDI-funded requests included (among others):

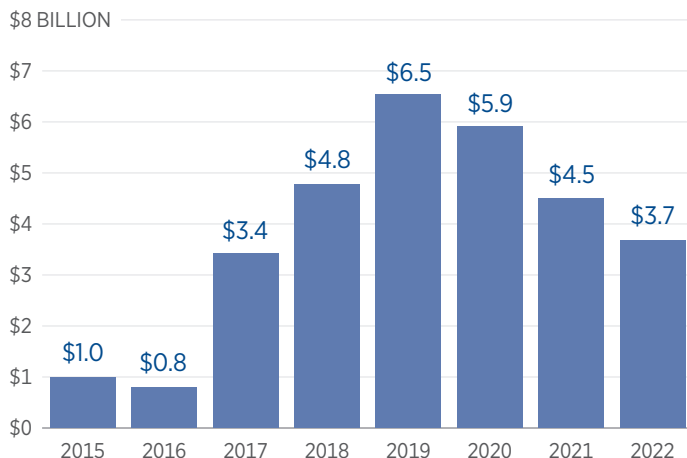
- "Continued presence of an Armored Brigade Combat Team (ABCT) with enablers, a Combat Aviation Brigade (CAB), and a Battalion to support NATO's Enhanced Forward Presence (eFP)";
- "Upgrade[d] Theater Anti-Submarine Warfare infrastructure";
- "Retain[ed] F-15C fighter aircraft in Europe" along with continued prepositioning of equipment; and
- "Enhanced scale and scope of rotational and deployed force element participation in exercise and training events in support of USEUCOM priority lines of effort."⁶

Testifying in April 2021, General Tod Wolters, Commander, U.S. European Command (EUCOM), and NATO's Supreme Allied Commander Europe (SACEUR), highlighted the importance of EDI funding in returning the United States to a posture of deterrence:

EDI enhances our theater posture to deter adversaries and compete in a contested logistics environment, while assuring Allies and Partners. Increases in forward stationed and rotational forces strengthen our contact, blunt, and surge layer capabilities, providing us the ability to compete and win in a multi-domain crisis or conflict. EDI investments improve our response using more robust theater infrastructure and prepositioned stocks. Funding for exercises, training, and building partner capacity bolster the readiness and interoperability of U.S. and Alliance forces. Together, these advances enable our deterrence and defense efforts through rapid deployment and sustainment of forces.⁷

European Deterrence Initiative in Decline

The European Deterrence Initiative (EDI) bolsters NATO collective defense by funding U.S. rotational troop deployments to Europe and critical military infrastructure, as well as exercises and capacity-building with allies.



NOTE: Figures for 2021 and 2022 are budget requests.

SOURCES: U.S. Department of Defense, Office of the Under Secretary of Defense (Comptroller), *Department of Defense Budget, Fiscal Year (FY) 2022: European Deterrence Initiative*, June 2021, p. 2, https://comptroller.defense.gov/Portals/45/Documents/defbudget/FY2022/FY2022_EDI_JBook.pdf (accessed September 2, 2021), and Frederico Bartels and Daniel Kochis, "Congress Should Transform the European Deterrence Initiative into an Enduring Commitment," The Heritage Foundation *Backgrounders* No. 3319, May 29, 2018, <https://www.heritage.org/europe/report/congress-should-transform-the-european-deterrence-initiative-enduring-commitment>.

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The EDI has supported infrastructure improvements across the region. One major EDI-funded project is a replacement hospital at Landstuhl, Germany. When completed in 2022, the new permanent facility “will provide state-of-the-art combat and contingency medical support to service members from EUCOM, AFRICOM and CENTCOM.”⁸ Landstuhl’s importance is illustrated by the fact that in early March 2020, it was one of the first two overseas U.S. laboratories to be capable of testing for coronavirus.⁹

In addition to the EDI, the Department of State has awarded \$277 million in grants since 2018 through its European Recapitalization Incentive Program (ERIP) and repurposed funds to help U.S. allies in Europe replace Russian equipment with U.S.-made equipment. This has led to \$2.5 billion in equipment sales including procurement of Black Hawk helicopters in Albania, Lithuania, and Slovakia; Stryker vehicles in North Macedonia; Bradley

Fighting Vehicles in Croatia; Bell Huey II helicopters in Bosnia and Herzegovina; and F16 purchases in Bulgaria.¹⁰

Forward Presence. In July 2021, the 1st Armored Brigade Combat Team (ABCT) of the 1st Infantry Division from Fort Riley, Kansas, replaced the outgoing BCT in the eighth armored rotation in support of Operation Atlantic Resolve. The BCT included “approximately 3,800 Soldiers, 80 tanks, 130 Bradley Fighting Vehicles, 15 Paladins, more than 500 tracked vehicles and more than 1,500 wheeled vehicles and equipment.”¹¹

Former Army Chief of Staff General Mark Milley has emphasized the value of ground forces in deterrence: “The air [and] maritime capabilities are very important, but I would submit that ground forces play an outsize role in conventional deterrence and conventional assurance of allies. Because your physical presence on the ground speaks volumes.”¹²

In addition to back-to-back rotations of armor, the U.S. has maintained a rotational aviation brigade in Europe since February 2017.¹³ As of March 2021, 1st Combat Aviation Brigade, 1st Infantry Division from Fort Riley, Kansas, was to be the seventh aviation rotation with 1,800 troops, 10 CH-47 Chinooks, 25 AH-64 Apaches, 50 UH-60 and HH-60 Black Hawk helicopters, and “1,800 wheeled vehicles and pieces of equipment.”¹⁴ The majority of the brigade is “stationed in Germany, with a forward presence in Latvia, Romania and Poland.”¹⁵

The Biden Administration cancelled plans put in place in July 2020 to withdraw nearly 12,000 troops from Germany. Instead, in April 2021, Secretary of Defense Lloyd Austin announced an increase of 500 U.S. troops to be stationed permanently at Wiesbaden.¹⁶ The U.S. also announced that it will retain three facilities that under the previous plan were to be turned back over to the German government.

In May 2018, the U.S. began to fly MQ-9 Reaper drones on unarmed reconnaissance flights out of Miroslawiec Airbase in Poland. The drones became fully operational in March 2019 when U.S. Air Force (USAF) officials stated that Poland was chosen for the MQ-9s because of its “strategic location.”¹⁷ In June 2020, runway work at Miroslawiec caused drones to be moved temporarily to Ämari Air Base in Estonia, marking the first-time that unmanned U.S. aircraft have operated out of Estonia.¹⁸

In the past, runway work has led to MQ-9s operating out of Campia Turzii Air Base in Romania. In January 2021, the U.S. announced that 90 USAF personnel and an unspecified number of MQ-9s would be based at Campia Turzii “to conduct intelligence, surveillance and reconnaissance missions in support of NATO operations.”¹⁹ According to General Jeffrey Harrigian, Commander of U.S. Air Forces in Europe, U.S. Air Forces Africa, and Allied Air Command, the base’s location 300 miles from the coast “really facilitates our ability to compete in the Black Sea.”²⁰ The Air Force has declined to say whether the deployment is permanent.²¹ In addition to Miroslawiec and

Campia Turzii, the U.S. also operates MQ-9s out of Łask Air Base in Poland.²²

In August 2020, the U.S. and Poland signed the Enhanced Defense Cooperation Agreement, which entered into force in November 2020. The agreement increases U.S. rotational forces in Poland by 1,000 people (for a total of 5,500) and provides for more exercises and infrastructure development that will be able to support a deployment of 20,000 U.S. troops if necessary in the future.²³ In addition:

[The agreement] covers matters such as the establishment of a forward division command in Poznań, stationing of a rotationally-present armoured brigade in Żagań-Świętoszów, deployment of Reaper UAVs squadron to Łask, the establishment of a Polish-US combat training centre (CTC) in Drawsko Pomorskie, the establishment of an airlift cargo hub for USAF in Wrocław-Starachowice, the establishment of the presence of an Army Aviation Brigade on a rotational basis, and a logistics battalion as well as special ops facility in Powiśle, and another special ops facility in Lubliniec.²⁴

The agreement also ironed out legal and cost-sharing arrangements for the increased U.S. presence.²⁵ On November 9, 2020, the U.S. Army’s V Corps, which had been deactivated in 2013, was reactivated, to be fully operational in November 2021.²⁶ Forward deployed at Poznań, Poland, it will remain headquartered at Fort Knox, Kentucky.²⁷

The U.S. has strengthened its presence in Norway as well. In April 2021, the two nations signed the Supplementary Defense Cooperation Agreement, which allows the U.S. to build additional infrastructure at Rygge and Sola Air Stations in southern Norway, as well as Evenes Air Station and Ramsund Naval Station above the Arctic Circle.²⁸ Construction at Evenes will support Norwegian and allied maritime patrol aircraft monitoring of Russian submarine activity. According to Norwegian Foreign Minister Ine Eriksen Soereide, “The agreement

reaffirms Norway's close relationship with the U.S. and confirms Norway's key position on the northern flank of NATO."²⁹

In August 2020, the Marine Corps announced the end of heel-to-toe rotations of 700 Marines to Norway, which began in 2017, opting for shorter, more sporadic deployments.³⁰ The first new deployment in October 2020 consisted of 400 Marines, and in the second, 1,000 Marines were deployed to Setermoen, Norway, from January–March 2021 for Arctic warfare training.³¹ Major General Patrick J. Hermesmann, former Commander of U.S. Marine Corps Forces Europe & Africa, has noted the growing relationship between Norway and the U.S. through “shared hardship of tough, realistic training in this austere environment.”³²

In addition to ground forces, in February and March 2021, four B-1 Lancers were based out of Ørland Air Station in southern Norway, marking the first time the aircraft have been based in Norway.³³ The Lancers conducted training exercises with allies Denmark, Germany, Italy, Norway, and Poland while also practicing landing and refueling at Bodø Air Base above the Arctic Circle.³⁴

In October 2020, at the behest of the United States, Norway announced the reopening of Olavsvern bunker, a mountainside submarine base near Tromsø with “9,800ft of deep water underground docks that can house and refit nuclear submarines.”³⁵ The base, which had been closed in 2002, is now open to U.S. Seawolf-class nuclear submarines.³⁶

The U.S. also continues to rotate a Sustainment Task Force “comprised of nearly 1,000 personnel and 200 pieces of equipment” from “11 active duty, U.S. Army Reserve and National Guard units.” The units that make up the task force are varied and “include ammunition, fuel, movement control, transportation, maintenance, ordnance, supply, and postal services.”³⁷

Operation Atlantic Resolve's naval component has consisted partly of increased deployments of U.S. ships to the Baltic and Black Seas since 2014. However, in 2020, the U.S. spent 82 days in the Black Sea, which is 27 less than the 109 days it spent in 2019.³⁸

Russian undersea activity continues at an elevated level. The U.S. Navy reestablished the 2nd Fleet, which is “responsible for the northern Atlantic Ocean,” in May 2018 nearly seven years after 2011 when it had been disbanded.³⁹ The 2nd Fleet reached full operational capability at the end of 2019.⁴⁰ The fleet was reestablished because of Russian militarization of the Arctic.⁴¹ “This is where the fight is...where the competition is,” according to Vice Admiral Andrew Lewis, Commander of the 2nd Fleet. “Specifically in the Atlantic [and] the undersea capability of the Russians.”⁴² In March 2021, in a statement exercise, three Russian ballistic missile submarines punched through ice in the Arctic near the North Pole.⁴³

For Vice Admiral Lewis, “Anti-submarine warfare is a primary mission for everybody in the United States Navy, regardless of what you wear on your chest.”⁴⁴ Admiral Burke has stated that the 6th Fleet keeps units operating “nearly continuously” in the Arctic and that U.S. submarines “really dominate that area.”⁴⁵ The U.S. also has capable partners in patrolling Arctic waters:

“UK [and] France to name two extremely reliable [and] capable partners. Canada... Norway...all contribute significantly to the theater of undersea warfare fight. Denmark is expanding their capabilities. Now almost every one of those nations that I've mentioned now have significant airborne maritime patrol reconnaissance aircraft, *if not the P-8A version, closely resembling the P-8 capabilities. Many have bought versions similar to the P-8. Their surface combatants today are incredibly capable too.*⁴⁶

In recent years, the U.S. has also made a point of publicly acknowledging the surfacing of nuclear-powered submarines in Arctic waters as a message of deterrence. One such example occurred in May 2021, when the Virginia-class submarine USS *New Mexico* docked in Tromsø, Norway.⁴⁷

Outside the Arctic, as explained by Admiral Burke, “advances in its submarine fleet and

expanding maritime strategic goals have reinvigorated Russia's access to the broader Atlantic Ocean."⁴⁸ These changes have led officials to state that the U.S. east coast is no longer "a safe haven."⁴⁹

Prepositioned Stocks. The U.S. continues to preposition equipment in Europe across all services. Equipment and ammunition sufficient to support a division will continue to arrive in Europe through 2021.⁵⁰ The U.S. Air Force, Special Forces, and Marine Corps are strengthening their prepositioned stocks, and the Marine Corps Prepositioning Program in Norway is emphasizing cold-weather equipment.⁵¹ The services' Force Design 2030 could change what is stored in the depot with an emphasis on rocket artillery, air-defense systems, and long-range unmanned aircraft while deemphasizing helicopters and tanks.⁵² DOD's FY 2021 budget proposal includes "funding to continue the build of a division-sized set of prepositioned equipment with corps-level enablers that is planned to contain two ABCTs (one of which is modernized), two Fires Brigades, air defense, engineer, movement control, sustainment and medical units."⁵³

In February 2020, General Gustave F. Perna, Commanding General of the U.S. Army Materiel Command, revealed that the U.S. is building an additional Army prepositioned stock set for Europe.⁵⁴ In April 2021, General Wolters testified that:

[W]e expect to establish a U.S. division-sized capability through the combination of forward-stationed forces, rotational forces, and Army Prepositioned Stocks (APS). APS equipment facilitates increased agility and lethality by enabling rapid integration of rotational combat units into operations. During Exercise DEFENDER-Europe 20, U.S. Army Europe and NATO Allies successfully exercised at the battalion and brigade levels, and we plan to assemble a divisional formation on NATO's Eastern flank in Exercise DEFENDER-Europe 24, the first since the end of the Cold War.⁵⁵

In May 2021, General Christopher Cavoli, Commander of U.S. Army Europe and Africa, noted a difference in focus between Defender Europe 2020 (northeastern Europe) and Defender Europe 2021 (southeastern Europe): "[With] Defender 2021 we have decided to exercise the ports, and the airports, and the rail lines, and the roadways throughout southeastern Europe."⁵⁶ Defender Europe 21 will involve 26 nations, including the U.S., and around 28,000 multinational forces in addition to several smaller exercises including:

Swift Response, which involves airborne operations in Estonia, Bulgaria and Romania; Immediate Response, which involves more than 5,000 troops from eight nations conducting live-fire training in 12 different countries; Saber Guardian, which includes more than 13,000 service members doing live-fire training as well as air and missile defense operations; and a command post exercise with 2,000 personnel exercising the ability of a headquarters to command multinational land forces.⁵⁷

Impact of COVID-19. The impact of COVID-19 was felt across the alliance, but it did not alter the alliance's ability to carry out the vital work of collective defense. In November 2020, NATO Secretary General Jens Stoltenberg stated that:

NATO Allies and our militaries have been supporting each other and our partners throughout this pandemic—transporting critical medical supplies, patients and experts; setting up military field hospitals and securing borders; supporting civilian efforts and helping to save lives. At the same time, we remain vigilant and ready, because NATO's main responsibility is to make sure this health crisis does not become a security crisis.⁵⁸

NATO's Euro-Atlantic Disaster Response Coordination Centre (EADRCC) helped to

coordinate assistance based on requests and the availability of supplies. In April 2020, NATO foreign ministers directed Supreme Allied Commander Wolters to help coordinate the matching of requests for aid with offers of assistance and to utilize excess airlift capacity to ease the transport of essential supplies across borders.⁵⁹ NATO's Strategic Airlift Capability (SAC), "a multinational programme that provides assured access to strategic military airlift capability for its 12 member nations,"⁶⁰ was leveraged for pandemic response. The NATO secretary general's 2020 annual report specifies that military forces of NATO allies had flown more than 350 flights to transport medical personnel, transported more than 1,500 tons of equipment, and helped to build almost 100 field hospitals.⁶¹ NATO also established a Pandemic Response Trust Fund, located in Romania and managed out of Taranto, Italy, which stockpiles medical equipment and supplies for allies and partners.⁶²

In addition to NATO facilitation, allies have assisted one another during the pandemic in numerous ways.⁶³ Because of U.S. overseas basing, despite a poor vaccine rollout in most of Europe, thousands of Europeans who are employed by the U.S. military or who are eligible dependents received vaccines at U.S. bases on the continent.⁶⁴ Additionally:

NATO assisted local authorities to fight COVID-19 where the Alliance is deployed. For example, in Afghanistan, the NATO-led Resolute Support Mission contributed to fighting the pandemic with the provision of critical supplies to Afghan security forces in 14 provinces, with several Allies providing essential equipment. In Iraq, essential medical equipment was delivered in coordination with NATO Mission Iraq. In Kosovo, the NATO-led Kosovo Force donated personal protective equipment to hospitals and delivered more than 50 donations of food and clothing to 14 Kosovo municipalities, in coordination with local charities and the Red Cross of Kosovo.⁶⁵

Another important impact of the pandemic was cancellation, postponement, or modification of exercises. Defender 2020, which was to be "the U.S. Army's largest exercise in Europe in 25 years, ranging across ten countries and involving 37,000 troops from at least 18 countries, of which 20,000 soldiers will be deployed from the United States to Europe,"⁶⁶ and drawing heavily on prepositioned equipment, was significantly scaled back, and linked exercises "Dynamic Front, Joint Warfighting Assessment, Saber Strike and Swift Response" were cancelled.⁶⁷ Another linked exercise, Allied Spirit, was postponed from May 2020 to June 2020 and scaled back. The U.S. and Poland were the only participating countries, only 6,000 of a planned 10,000 soldiers took part, and "NATO's strategic airlift capability [was] no longer included."⁶⁸

Despite these changes, the scaled back Defender 2020 was an important exercise that "brought more than 6,000 soldiers and 3,000 pieces of equipment from the US to Europe via air and sea and saw 9,000 pieces of equipment drawn from Army prepositioned stocks on the continent."⁶⁹

Because of coronavirus-related concerns, BALTOPS 2020, which took place in June 2020, for the first time did not include amphibious landings. The lack of amphibious landings, however, allowed for a focus on other areas including testing the ability of NATO's maritime headquarters in Lisbon "to coordinate with 6th Fleet headquarters in Naples, Italy, NATO operation centers and forces in the Baltic Sea."⁷⁰

U.S. Nuclear Weapons in Europe. In his 2021 EUCOM posture statement, General Wolters reaffirmed that "[a]s long as nuclear weapons exist, NATO must remain a nuclear Alliance. NATO's nuclear capability preserves peace, prevents coercion, deters aggression, and instills confidence in the transatlantic bond. The Alliance's strategic forces guarantee security and backstop U.S. operations in Europe."⁷¹

It is believed that until the end of the Cold War, the U.S. maintained approximately 2,500 nuclear warheads in Europe. Unofficial

estimates range between 150 and 200 warheads spread out across bases in Belgium, Italy, Germany, the Netherlands, and Turkey.⁷²

In October 2019, reports surfaced that the U.S. was considering moving the approximately 50 tactical nuclear weapons stored at Incirlik Air Base in Turkey in light of ongoing tensions, but this does not appear to have happened.⁷³ All of these weapons are free-fall gravity bombs designed for use with U.S. and allied dual-capable aircraft. Although tactical nuclear weapons are forward deployed to Incirlik, “there are no aircraft capable of delivering the B-61 gravity bombs co-located at Incirlik Airbase.”⁷⁴ The U.S. has nuclear sharing agreements with Belgium, Italy, Germany, and the Netherlands that allow for U.S. tactical nuclear weapons to be delivered by allied aircraft, but no such agreement is in force with Turkey: “The weapons at Incirlik Air Base in Turkey are solely for use on U.S. aircraft.”⁷⁵

The B61 nuclear gravity bomb that is “deployed from U.S. Air Force and North Atlantic Treaty Organization (NATO) bases” is undergoing a life extension program that is expected to add at least 20 years to its service life and “improve the bomb’s safety, security, and effectiveness.”⁷⁶ The B61-12 bomb, according to U.S. officials, is “intended to be three times more accurate than its predecessors.”⁷⁷ The first production unit is slated for FY 2022 with production completed in 2025.⁷⁸ In November 2020, the U.S. tested the B61-12 successfully with an F-35A following tests with the F-15E and B-2 bomber.⁷⁹

China. At NATO’s 2019 leaders meeting in London, the alliance “recognize[d] that China’s growing influence and international policies present both opportunities and challenges that we need to address together as an Alliance.”⁸⁰ Issues of concern include budding Russian and Chinese military cooperation as well as Chinese technology, propaganda, offensive cyber capabilities, and control of critical infrastructure in Europe, all of which affect NATO’s member states. In an interview, Admiral Burke noted the potential risk to U.S. and alliance interests from Chinese infrastructure acquisitions in Europe:

Today, the Chinese have a controlling interest in 12 European ports. So, are NATO countries going to be able to count on those ports for Free Trade, and if NATO has to defend Europe, will they allow us into those ports to refuel, resupply, do repairs, rearm? We don’t know if we can count on that. It’s a troubling pattern and our European partners are increasingly aware and awakened to this potential threat.⁸¹

In the same interview, he observed that the Chinese are “increasingly present” in the Mediterranean not just with investments, but also with warships.⁸²

Important Alliances and Bilateral Relations in Europe

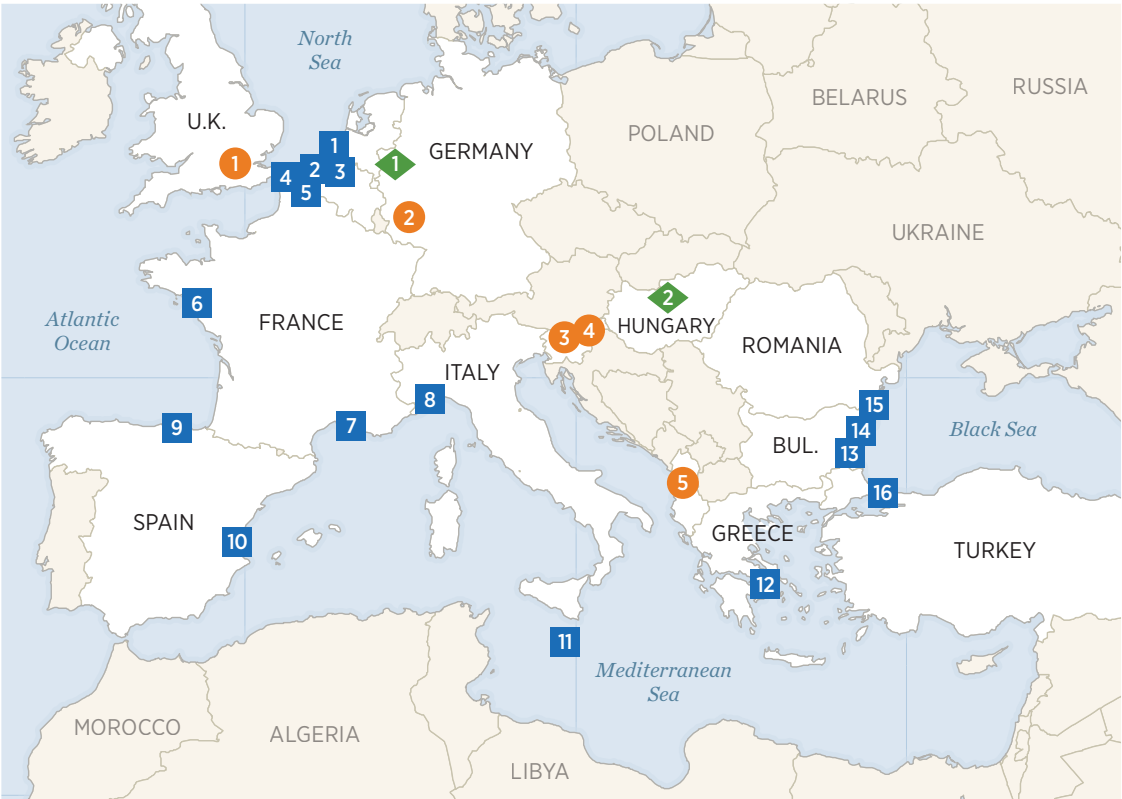
The United States has a number of important multilateral and bilateral relationships in Europe. First and foremost is the North Atlantic Treaty Organization, the world’s most important and arguably most successful defense alliance.

North Atlantic Treaty Organization. NATO is an intergovernmental, multilateral security organization that was designed originally to defend Western Europe from the Soviet Union. It anchored the U.S. firmly in Europe, solidified Western resolve during the Cold War, and rallied European support following the 9/11 terrorist attacks. NATO has been the bedrock of transatlantic security cooperation ever since its creation in 1949 and is likely to remain so for the foreseeable future.

In April 2021, following a U.S. decision to withdraw forces from Afghanistan, NATO declared “that there is no military solution to the challenges Afghanistan faces”⁸³ and ended Operation Resolute Support, a non-combat operation intended to provide “training, advice and assistance to Afghan security forces and institutions.”⁸⁴ The withdrawal of alliance forces began on May 1, 2021.⁸⁵

Two ongoing NATO operations are Kosovo Force (KFOR) and Operation Sea Guardian in the Mediterranean to maintain “maritime

China's Ownership Stake in European Ports, Airports, and Railways



	Unknown	Less than Half	Nearly Half	Majority	Owns		Unknown	Less than Half	Nearly Half	Majority	Owns
PORTS						AIRPORTS					
1		●				1		●			
2					●	2				●	
3		●				3				●	
4			●			4					●
5		●				5				●	
6		●				RAILWAYS					
7		●				1		●			
8			●			2		●			
9					●						
10					●						
11		●									
12					●						
13	●										
14	●										
15	●										
16					●						

* Includes Terminaux Nord and Terminal de France

SOURCE: Heritage Foundation research.

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situational awareness, counter-terrorism at sea and support to capacity-building.”⁸⁶ Additional operations include Airborne Surveillance and Interception Capabilities to meet Iceland’s Peacetime Preparedness Needs; NATO Air Policing over the Baltics, Albania, Bulgaria, Montenegro, Romania, and Slovenia;⁸⁷ and support to the African Union Mission in Somalia through occasional air and sealifts while helping to train and build capacity in the African Standby Force.⁸⁸

Finally, there is NATO Mission Iraq (NMI), a non-combat mission to train and build the capacity of Iraqi Security Forces. In February 2021, following an Iraqi government request in late 2020, NATO defense ministers agreed to increase the size of NMI and expand the scope of training activities beyond the Baghdad region.⁸⁹ NATO Secretary General Jens Stoltenberg stated that an incremental increase could raise the number of NATO troops participating in NMI from 500 to around 4,000.⁹⁰

In recent years, NATO has focused strongly on military mobility and logistics in line with its 2014 Readiness Action Plan (RAP). The RAP was designed to reassure nervous member states and put in motion “longer-term changes to NATO’s forces and command structure so that the Alliance will be better able to react swiftly and decisively to sudden crises.”⁹¹

In June 2018, NATO defense ministers agreed to the Four 30s plan to improve the movement of troops in Europe by 2020. “Four 30s” derives from the plan’s objective that NATO should be able to respond to any aggression with 30 battalions, 30 squadrons of aircraft, and 30 warships within 30 days.⁹² According to Secretary General Stoltenberg, “Allies contributed all of the combat forces required for this initiative” in 2019 “and are now working to build and maintain the level of readiness of these forces and organize them into larger formations.”⁹³

At the 2019 London Summit, space was recognized as an operational domain.⁹⁴ Subsequently, in October 2020, NATO agreed to launch a space center, to “be located within existing facilities at Allied Air Command” at

Ramstein Air Base and charged with “support[ing] NATO operations, missions and activities in order to increase NATO Space Domain Awareness through the co-ordination of data, products and services with Allies.”⁹⁵

Enhanced Forward Presence. The centerpiece of NATO’s renewed focus on collective defense is the four multinational battalions stationed in Poland and the Baltic States as part of the alliance’s Enhanced Forward Presence (EFP). Different countries serve as lead (framework) nations, providing overall coordination and the centerpiece force that is augmented by other contributing nations, for different supported countries.

- The U.S. serves as the framework nation in Orzysz, Poland, near the Suwalki Gap. The U.S.-led battlegroup consists of 691 American troops and an armored cavalry squadron with combat service and support enablers augmented by 80 troops from Croatia, 120 from Romania, and 140 from the United Kingdom.⁹⁶
- In Estonia, the United Kingdom serves as the framework nation, headquartered in Tapa with 828 troops in an armored infantry battalion with main battle tanks and armored fighting vehicles along with “self-propelled artillery and air defence assets, engineers, an intelligence, surveillance and reconnaissance group and logistic support elements”; one Icelandic strategic communications civilian; and 337 French troops with main battle tanks and armored fighting vehicles.⁹⁷
- In Adazi, Latvia, Canada is the framework nation with 527 troops and armored fighting vehicles augmented by 21 troops from Albania, 56 from the Czech Republic, one civilian from Iceland, 200 troops from Italy with tanks and armored fighting vehicles, 10 from Montenegro, 175 from Poland with tanks, 97 from Slovakia, 40 from Slovenia, and 346 from Spain with tanks and armored fighting vehicles.⁹⁸

- In Rukla, Lithuania, Germany serves as the framework nation with 583 troops augmented by another 198 from Belgium, 36 from the Czech Republic, 270 from the Netherlands, 195 from Norway with main battle tanks and infantry fighting vehicles, a contribution from Luxembourg,⁹⁹ and one Icelandic public affairs civilian.¹⁰⁰

EFP troops are under NATO command and control; a Multinational Division Headquarters Northeast located in Elblag, Poland, which reached full operational capability in December 2018, coordinates the four battalions.¹⁰¹ In February 2017, the Baltic States signed an agreement to facilitate the movement of NATO forces among the countries.¹⁰² Some EFP host nations have called for additional assets—importantly, enablers to be added to the battalions. Latvia, for example, views it as “extremely important to strengthen allied presence with long-range components, such as fire support, air defence support and on-shore (port)/off-shore components.”¹⁰³

NATO also has established eight Force Integration Units located in Sofia, Bulgaria; Tallinn, Estonia; Riga, Latvia; Vilnius, Lithuania; Bydgoszcz, Poland; Bucharest, Romania; Szekesfehervar, Hungary; and Bratislava, Slovakia. These new units “will help facilitate the rapid deployment of Allied forces to the Eastern part of the Alliance, support collective defence planning and assist in coordinating training and exercises.”¹⁰⁴

At its July 2016 Warsaw summit, NATO agreed to “develop tailored forward presence in the southeast part of the Alliance territory.” Specifically:

Appropriate measures, tailored to the Black Sea region and including the Romanian initiative to establish a multinational framework brigade to help improve integrated training of Allied units under Headquarters Multinational Division Southeast [HQ MND–SE], will contribute to the Alliance’s strengthened deterrence and defence posture, situational

awareness, and peacetime demonstration of NATO’s intent to operate without constraint. It will also provide a strong signal of support to regional security. Options for a strengthened NATO air and maritime presence will be assessed.¹⁰⁵

The land component of this presence is a multinational framework brigade based in Craiova, Romania, under the control of HQ MND–SE in Bucharest.¹⁰⁶ HQ MND–SE achieved final operational capability in March 2018.¹⁰⁷ NATO’s tailored forward presence is supported by units from Bulgaria, Canada, France, Germany, Hungary, Italy, Luxembourg, Poland, Portugal, Romania, Spain, and Turkey.¹⁰⁸

The U.S. and Romania jointly organize the biannual Saber Guardian exercise, which is “designed to improve the integration of multinational combat forces.”¹⁰⁹ In the 2021 iteration, scheduled to take place in Bulgaria, Hungary, and Romania,¹¹⁰ “more than 13,000 service members from 19 countries will conduct live fire and air and missile defense operations, plus a large scale medical evacuation.”¹¹¹ Saber Guardian 21 is one of several exercises linked with DEFENDER-Europe 21, which has a regional focus. According to General Cavoli, “DEFENDER-Europe 21 provides us the best opportunity to hone our abilities alongside our allies and partners in the strategically important Balkans and Black Sea region so that collectively, we are ready to respond to any crisis that may arise.”¹¹²

NATO continues air policing missions over Bulgarian and Romanian airspace. In September and October of 2020, six U.S. F-16s took part in a four-week air policing mission over Bulgaria with Bulgarian air force units and Canadian F-18s flying from Romania.¹¹³ In 2020, the alliance saw a modest uptick in Russian aircraft approaching or violating NATO airspace. Jets were scrambled 400 times across domains, and 350 of these incidents involved Russian military aircraft.¹¹⁴

In October 2019, addressing a NATO capability gap in aerial refueling, the Czech

Republic, Belgium, Germany, Luxembourg, the Netherlands, and Norway jointly procured A330 air-to-air refueling aircraft, to be deployed from 2020–2024; the fourth of nine aircraft was delivered in April 2021.¹¹⁵ Five of the aircraft are planned to operate out of Eindhoven airbase in the Netherlands, and three will operate out of Germany's Cologne–Wahn airbase.¹¹⁶ The U.S. currently accounts for 90 percent of NATO air-to-air refuelings.¹¹⁷

Additionally, in November 2019, NATO announced a \$1 billion package to upgrade its Airborne Warning and Control System (AWACS) planes, coupled with “an announcement that the first of five Global Hawk drones making up the Alliance Ground Surveillance program was en route from the United States to its future home base at Sigonella, Sicily.”¹¹⁸

In 2018, NATO established two new commands: a joint force command for the Atlantic based in Norfolk, Virginia, and a logistics and military mobility command.¹¹⁹ These commands consist of a total of 1,500 personnel, with the logistics command headquartered in Ulm, Germany.¹²⁰ Logistics have been a significant focus of the alliance in recent years. An internal alliance assessment in 2017 reportedly concluded that NATO’s “ability to logistically support rapid reinforcement in the much-expanded territory covering SACEUR’s (Supreme Allied Commander Europe) area of operation has atrophied since the end of the Cold War.”¹²¹ Former U.S. Commander of European Command Lieutenant General Ben Hodges has described the importance of military mobility for deterrence: “We need to think how fast the Russians are moving. We must be able to move as fast [as] or faster than them so that they do not make the mistake of thinking that they could launch an attack of some sort in an area before we could respond.”¹²²

Continued shortfalls in the alliance’s ability to move soldiers and equipment swiftly and efficiently include “limitations of road surface weight capacity, bridges capacity and railway traffic limits” as well as differences in rail gauges and continued legal, procedural, and regulatory slowdowns.¹²³ NATO has focused heavily

on overcoming these barriers, working with the European Union, which retains competencies that are critical to improving military mobility, particularly with regard to overcoming legal and regulatory hurdles. In March 2018, the EU published an Action Plan on Military Mobility that “identifies a series of operational measures to tackle physical, procedural or regulatory barriers which hamper military mobility.”¹²⁴ Cooperation has brought about some beneficial legal and regulatory changes,¹²⁵ but notable challenges persist.

Cyber Capabilities. “A secure cyberspace is essential to everything the Alliance does,” according to NATO’s secretary general. “This is why cyber defence is part of NATO’s core task of collective defence. NATO has made clear that a severe cyber attack could lead it to invoke Article 5 of the Washington Treaty.”¹²⁶ Ultimately, the decision to invoke Article 5 will be a political decision.

At the 2016 Warsaw summit, NATO recognized cyberspace as a domain of operations, and on August 31, 2018, it established a Cyberspace Operations Center (CYOC) in Mons, Belgium, that will include 70 cyber experts when it becomes fully operational in 2023¹²⁷ and “will provide situational awareness and coordination of NATO operational activity within cyberspace.”¹²⁸ In 2020, NATO published its first cyber doctrine.¹²⁹

In 2017, NATO announced a planned \$1.85 billion expansion of its satellite communications capabilities.¹³⁰ Its decision was driven in part by the acquisition of five Global Hawk surveillance drones, which generate significant data; after delays, the first drone was delivered in 2019 to Sigonella Naval Air Station.¹³¹ Satellite communications are critical both for piloting the Global Hawks and for disseminating the surveillance data they collect in real time.

The alliance’s Joint Air Power (JAP) Strategy, released in June 2018, highlights the importance of cyber and space capabilities:

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, whilst providing opportunities for the Alliance to integrate such capabilities with JAP for kinetic and non-kinetic effect. Both the resilience and exploitation of such capabilities is [*sic*] therefore a critical requirement that future development should address.¹³²

Through the NATO Industry Cyber Partnership, NATO has also invested in a stronger relationship with industry. As described by NATO's secretary general:

This initiative, established in 2014, facilitates cooperation for the mutual benefit of both NATO and Allies' industry and academia. In 2019, industry continued to support NATO's cyber defence by providing real-time actionable cyber threat information, thereby enabling stakeholders to take rapid action to respond to threats.¹³³

Areas of further cooperation within NATO include the NATO Intelligence on Cyberspace Community of Interest “to more regularly exchange information, assessments and best practices—improving NATO's ability to prevent and respond to cyber threats,” and the NATO Communications and Information Agency, which “continued to facilitate information exchanges between NATO Allies on cyber threats and incidents through its Cyber Collaboration Network. Twenty-one Allies have joined the network to date.”¹³⁴

With respect to the likely effects of Chinese 5G technology on intelligence sharing in Europe, U.S. officials have said that utilizing Chinese state-controlled companies for next-generation wireless networks would be “nothing short of madness.”¹³⁵ A Chinese presence in European telecommunications networks could decisively compromise the communications integrity of the military and intelligence community. The London Declaration stated that “NATO and Allies, within

their respective authority, are committed to ensuring the security of our communications, including 5G, recognizing the need to rely on secure and resilient systems.”¹³⁶

The landscape in Europe for key decisions regarding Chinese technology in next-generation wireless networks remains in limbo; many nations have taken decisions in recent years to restrict Chinese vendors from 5G networks, but these threat perceptions are not uniform. The impact of the emerging patchwork approach toward Chinese 5G technology on the European operating environment will become clearer in the coming years.

Ballistic Missile Defense. NATO's ballistic missile defense (BMD) achieved initial operational capability in July 2016, offering a stronger capability to defend alliance populations, territory, and forces across the southern portion of Europe from a potential ballistic missile attack.

- An Aegis Ashore site in Deveselu, Romania, became operational in May 2016, and upgrades were completed in August 2019.¹³⁷
- An AN/TPY-2 forward-based early-warning BMD radar established at Kurecik, Turkey, has a range of up to 1,800 miles. The U.S. is also reportedly building a second undisclosed site near Malatya, expanding capability at that location.¹³⁸
- BMD-capable U.S. Aegis-equipped ships are forward deployed at Rota, Spain.¹³⁹ Two additional destroyers will be based out of Rota by 2025 or 2026, bringing the total to six; Rota's four current destroyers are the “workhorses of deterrence” according to General Wolters.¹⁴⁰
- A second Aegis Ashore site in Redzikowo, Poland, that broke ground in May 2016 has faced delays but was commissioned in September 2020 and will begin operations in 2022.¹⁴¹

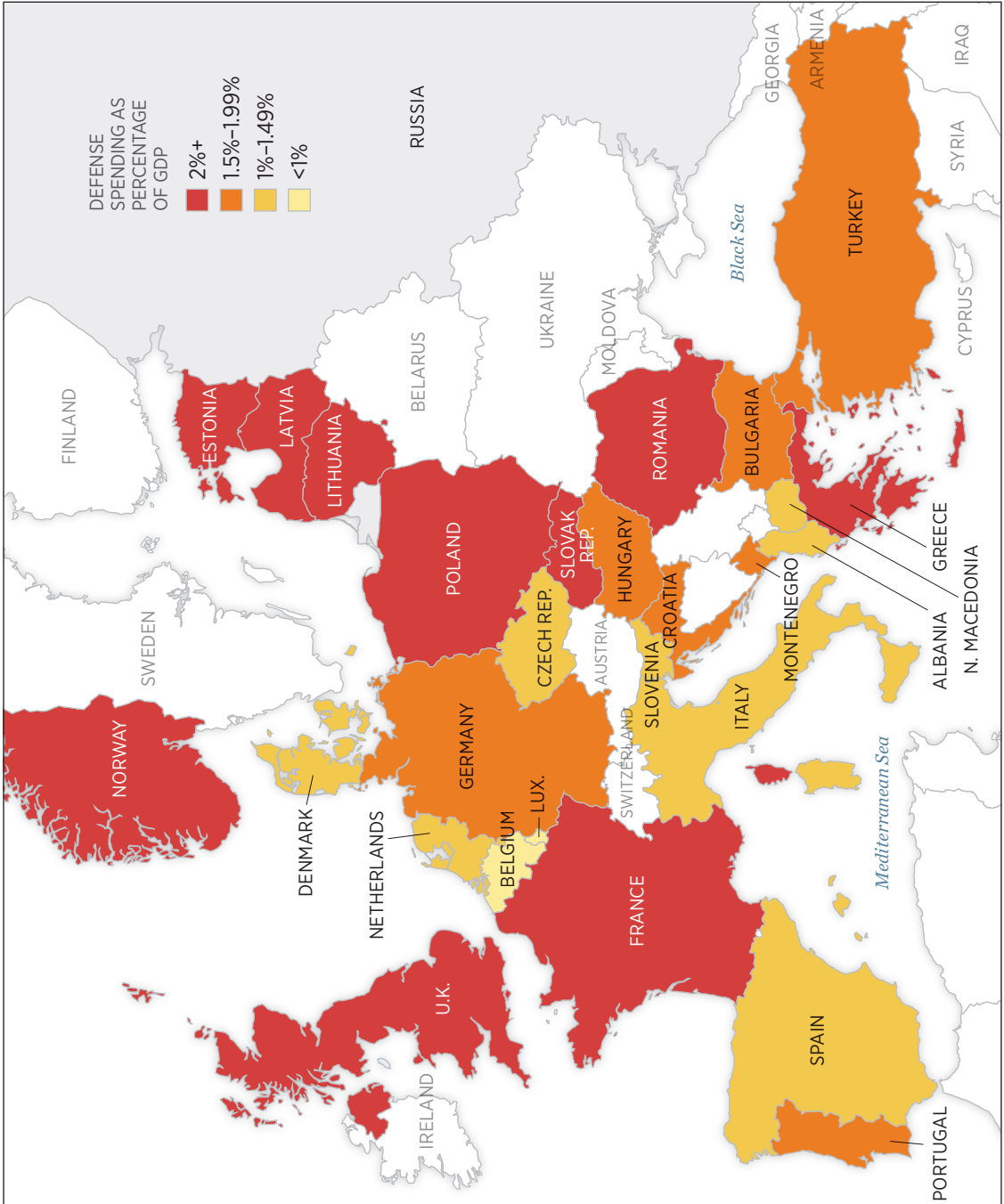
MAP 2

Threat Proximity Largely Dictates Military Spending

In Europe, NATO members closer to Russia and the Middle East spend, in general, more on defense than those further away.

NOTES: Figures are estimates for 2021. Iceland is not listed because it has no military.
SOURCE: Press release, "Defence Expenditure of NATO Countries (2013–2020)," North Atlantic Treaty Organization, March 16, 2021, https://www.nato.int/nato_static_fl2014/assets/pdf/2021/3/pdf/210316-pr-2020-2021/30-en.pdf (accessed July 23, 2021).

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- Ramstein Air Base in Germany hosts a command and control center.¹⁴²
- The U.K. operates an early warning BMD radar at RAF Fylingdales in England. The U.K. continues to consider upgrades to its Type 45 Destroyers with BMD capable missiles.¹⁴³
- In May and June 2021, 10 nations—Belgium, Denmark, France, Germany, Italy, the Netherlands, Norway, Spain, the United Kingdom, and the United States—took part in the biannual BMD exercise Formidable Shield.¹⁴⁴ Formidable Shield 21 features 15 ships, 10 aircraft, and 3,300 participants¹⁴⁵ and “is designed to improve allied interoperability in a live-fire joint IAMD [Integrated Air and Missile Defense] environment, using NATO command and control reporting structures.”¹⁴⁶

In January 2017, the Russian embassy in Norway threatened that if Norway contributes ships or radar to NATO BMD, Russia “will have to react to defend our security.”¹⁴⁷ Norway operates four *Fridtjof Nansen*-class Aegis-equipped frigates that are not currently BMD capable.¹⁴⁸ A fifth Aegis-equipped frigate, the *Helge Ingstad*, collided with an oil tanker and sustained so much damage that the government has decided to scrap it.¹⁴⁹

Denmark, which agreed in 2014 to equip at least one of its *Iver Huitfeldt*-class frigates with radar to contribute to NATO BMD, reaffirmed this commitment in the Defence Agreement 2018–2023.¹⁵⁰ Russia’s ambassador in Copenhagen has openly threatened Denmark for agreeing to contribute: “I do not believe that Danish people fully understand the consequences of what may happen if Denmark joins the American-led missile defense system. If Denmark joins, Danish warships become targets for Russian nuclear missiles.”¹⁵¹

In March 2019, the first of four Dutch *De Zeven Provinciën*-class frigates received a SMART-L Multi-Mission/Naval (MM/N) D-band long-range radar upgrade that is

“capable of BMD mission (surveillance and tracking of ballistic missiles) up to 2000 km while simultaneous[ly] maintaining the air defence capability.”¹⁵² All four Dutch frigates will receive the radar upgrade and carry SM-3 surface-to-air missiles.¹⁵³ In December 2020, the Royal Netherlands and German navies signed an agreement to work jointly to develop a replacement for the Dutch *De Zeven Provinciën*-class frigate and Germany’s three F124 *Sachsen*-class frigates.¹⁵⁴

Belgian Admiral Jan de Beurme stated in April 2021 that “we are studying the feasibility of integrating ballistic missile defense shooter capabilities into the new frigates.”¹⁵⁵ A contract to develop a weapons suite for a joint Belgian and Dutch procurement of two multipurpose frigates apiece was awarded in February 2019, and the vessels are expected to enter service beginning in 2024.¹⁵⁶

Spain currently operates four Aegis-equipped F-100 *Alvaro de Bazan*-class frigates, but they are not yet BMD capable.¹⁵⁷ In April 2019, Spain signed an agreement to procure five F-110 multi-mission frigates; the first F-110 will likely be deployed in 2026. The Aegis-equipped frigates “will host the first naval solid-state S-band radar for the Spanish Navy.”¹⁵⁸

The Italian Navy is procuring seven multi-role offshore patrol vessels (PPAs) that are to be delivered from 2021–2026.¹⁵⁹ The first of two PPAs in full configuration that are BMD capable will be delivered in 2024.¹⁶⁰

Quality of Armed Forces in the Region

Article 3 of the 1949 North Atlantic Treaty, NATO’s founding document, states that at a minimum, members “will maintain and develop their individual and collective capacity to resist armed attack.”¹⁶¹ Regrettably, only a handful of NATO members are living up to their Article 3 commitments.

In 2020, 11 countries—Estonia (2.33 percent); France (2.04 percent); Greece (2.68 percent); Latvia (2.27 percent); Lithuania (2.13 percent); Norway (2.00 percent); Poland (2.31 percent); Romania (2.07 percent); the Slovak

Republic (2.00 percent); the United Kingdom (2.32 percent); and the United States (3.73 percent)—spent the required minimum of 2 percent of gross domestic product (GDP) on defense,¹⁶² and 18 NATO allies spent 20 percent of their defense budgets on “major new capabilities.”¹⁶³ NATO defense spending continues to trend upward: “2020 marked the sixth consecutive year of growth in defence spending by European Allies and Canada, with an increase in real terms of 3.9% from 2019 to 2020.”¹⁶⁴

Germany. Germany remains an economic powerhouse that punches well below its weight in terms of defense. In 2020, it spent only 1.56 percent of GDP on defense and 16.9 percent of its defense budget on equipment.¹⁶⁵ In November 2019, German defense Minister Annegret Kramp-Karrenbauer announced that the nation may not attain the 2 percent benchmark until 2031.¹⁶⁶ German defense spending is rising, however: The \$63.8 billion budget for 2021 is a 3.2 percent increase over the budget for 2020.¹⁶⁷

Despite the positive momentum, the German military remains underfunded and underequipped. One former German diplomat has stated that without NATO, Germany “would have to double its defence budget to 3–3.5 per cent of GDP or risk being ‘completely blind, deaf and defenceless.’”¹⁶⁸

Germany continues to serve as the framework nation for NATO’s EFP battalion in Lithuania, with 583 troops stationed there.¹⁶⁹ Germany is also spending \$110 million through 2021 to upgrade facilities in Lithuania that include barracks used by the multinational battalion.¹⁷⁰ The Luftwaffe has taken part in Baltic Air Policing 13 times—more than any other nation’s armed forces—most recently out of Šiauliai air base in Lithuania in the summer of 2020¹⁷¹ and out of Ämari Air Base in Estonia from September 2020 to May 2021.¹⁷²

Germany maintains 70 troops in Kosovo as part of NATO’s Kosovo Force¹⁷³ and had been the second-largest contributor to NATO’s Resolute Support Mission in Afghanistan with 1,300 troops.¹⁷⁴ In April 2021, the Bundestag extended the mandate for Germany’s

participation in NATO’s Sea Guardian maritime security operation, as well as Germany’s participation in United Nations Mission in South Sudan, extending both mandates through March 31, 2022.¹⁷⁵ German forces also participate in a number of additional U.N. peacekeeping missions including missions in Lebanon and Mali.¹⁷⁶

In October 2020, Germany extended its non-combat training mission in Iraq and its air-to-air refueling and air surveillance radar missions in support of the counter-ISIS coalition, but it ended its Tornado reconnaissance mission on March 31, 2020.¹⁷⁷ Germany maintains 90 soldiers in Iraq helping to train Kurdish forces.¹⁷⁸

In April 2017, the Bundeswehr established a new cyber command, which will have a staff of approximately 14,500 by the time it becomes fully operational this year.¹⁷⁹ Germany also led NATO’s Very High Readiness Joint Task Force (VJTF) in 2019 and will do so again in 2023, with “the earmarked units prioritised for modernisation and upgrades.”¹⁸⁰

Although Germany’s forces have taken on additional roles in recent years, its overall military continues to suffer serious equipment and readiness issues. As of December 2020, the Federal Ministry of Defence estimated that readiness for all major weapons systems was 74 percent—only a slight improvement since June 2020’s 71 percent.¹⁸¹

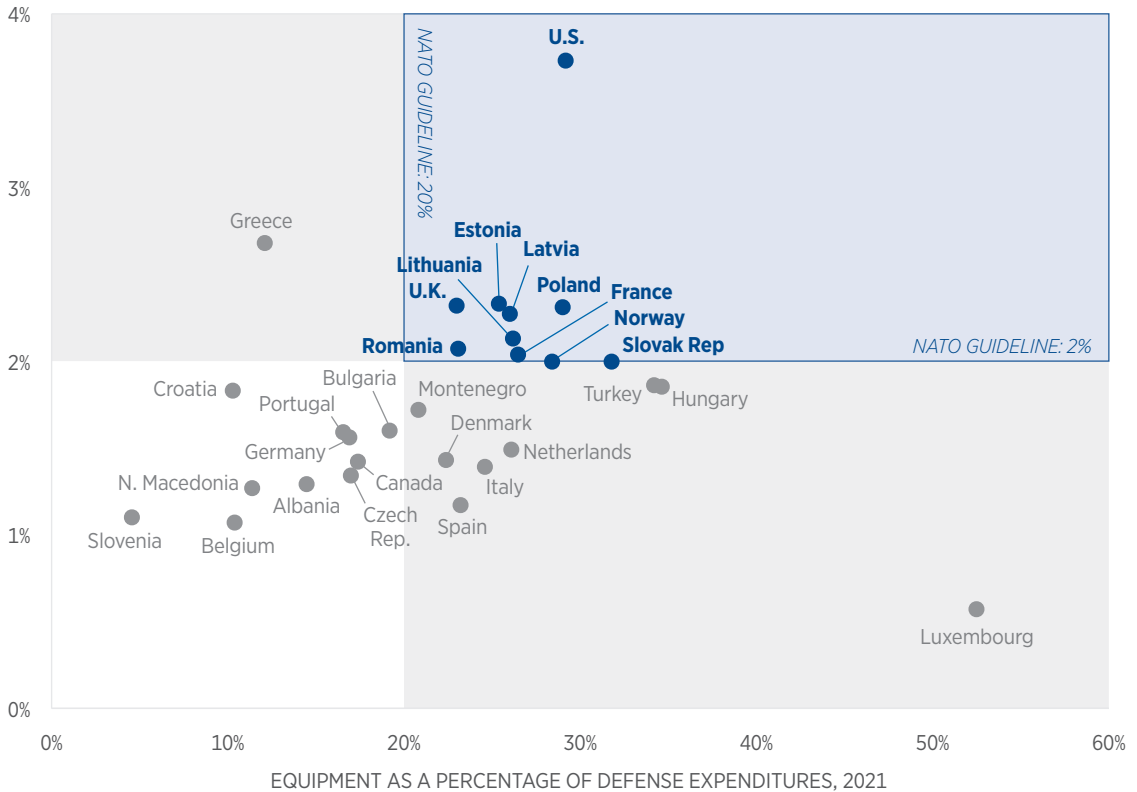
Deployments often strain the military for years. In one example, following deployment of TIGER combat helicopters to Mali in 2017–2018, “the concentration of all available resources in training, personnel, special tools and spare parts on this 15-month deployment halted the process chain in domestic operations to such an extent that this continued to have a significant disruptive impact on materiel readiness in 2020.”¹⁸² Even Germany’s robust contribution to Baltic Air Policing “takes everything it has, often at the expense of training initiatives.”¹⁸³

Significant problems identified in a February 2021 parliamentary report include just 13 operational LEOPARD 2 battle tanks being

Less than Half of NATO Members Follow Defense Spending Guidelines

NATO members are expected to spend at least 2 percent of their GDP on defense, and at least 20 percent of their defense spending is supposed to go to equipment. Only the U.S. and nine other nations do both.

DEFENSE SPENDING AS A PERCENTAGE OF GDP, 2021



NOTE: Figures are estimates for 2021. Iceland is not listed because it has no military.

SOURCE: Press release, "Defence Expenditure of NATO Countries (2013–2020)," North Atlantic Treaty Organization, March 16, 2021, https://www.nato.int/nato_static_fi2014/assets/pdf/2021/3/pdf/210316-pr-2020-30-en.pdf (accessed July 23, 2021).

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available for training in 2020 (well under the target of 35)¹⁸⁴ and procurement knots such as those that resulted in a lack of cold-weather suits and flight helmets for the Navy.¹⁸⁵ In September 2020, a tender to replace Germany's CH-53G heavy transport helicopters was

cancelled because of high cost, although a replacement is still being sought.¹⁸⁶ However, there also was some small progress in readiness; for instance, six more Eurofighters were available for flight operations every day in 2020 than were available in 2019.¹⁸⁷

Equipment problems are creating downstream pilot issues. Nearly half of the Luftwaffe's pilots are unable to meet NATO training requirements because a shortage of available planes has caused a lack of flight time.¹⁸⁸ As a result, more pilots are leaving the armed forces.¹⁸⁹ Only 106 of the air force's 220 jet pilot positions are filled, and only 44 out of 84 helicopter pilot positions are filled.¹⁹⁰

The situation is not much better for the navy. Problems with naval submarines include "long yard periods, difficulties with main batteries and the practice of 'controlled removal' from some submarines in order to keep others operational."¹⁹¹ Reports surfaced in March 2021 that more than 100 German vessels including submarines rely on a Russian navigation system that does not meet NATO standards and that "[d]uring a worst-case cyberattack, navigation data could be hacked and the ship could fully lose operability."¹⁹²

In December 2017, Germany's F-125 *Baden-Württemberg*-class frigate failed sea trials because of "software and hardware defects."¹⁹³ The frigate reportedly had "problems with its radar, electronics and the flameproof coating on its fuel tanks," was "found to list to the starboard," and lacked sufficiently robust armaments as well as the ability to add them.¹⁹⁴ Concerns have been raised about whether the frigate's ability to defend against aerial attack is so deficient that the ship is fit only for "stabilization operations."¹⁹⁵ In addition, the lack of sonar and torpedo tubes makes the ship vulnerable to attack by submarines.¹⁹⁶

Germany returned the ship to the shipbuilder following delivery.¹⁹⁷ The redesigned *Baden-Württemberg* was belatedly commissioned in June 2019, and Germany took delivery of the third of four F-125s in March 2021.¹⁹⁸ In January 2020, Germany announced a \$6.7 billion contract with a Dutch and German shipbuilder to build the next-generation MKS 180 frigate, with the first of four (with the possibility of another two) to be delivered in 2027.¹⁹⁹

The number of personnel on active duty in Germany's army rose from 176,000 in 2016 to 183,500 in 2020.²⁰⁰ According to

the International Institute for Strategic Studies (IISS):

The government recognizes that the force structure needs to expand in light of Germany's ambitious plans but is grappling with recruitment and retention issues. To address this, Berlin launched a new strategy in October 2019, designed to create a more flexible reserve cadre that can rapidly respond to territorial and collective-defence tasks.²⁰¹

However, partially because of the pandemic, Germany recruited 19 percent fewer people in 2020 than it recruited in 2019; "around 20,200 military personnel positions above the junior ranks were vacant" at the end of 2020; and the average age of career soldiers has risen three years since 2012 to 33.4 years.²⁰² In April 2021, Germany started a yearlong "voluntary military service in homeland security" program that mixes combat training with specialist training to prepare 1,000 young Germans per year to deal with pandemics or natural disasters and protect critical infrastructure.²⁰³

In March 2020, Germany announced that it will purchase 90 Eurofighter Typhoons and 45 F/A-18E/F Super Hornets to replace its fleet of Tornados.²⁰⁴ It will cost almost €9 billion to keep Germany's Tornados in the air until their scheduled retirement in 2031.²⁰⁵ Their replacement will need to be able to carry both nuclear and conventional weapons, as the Tornados are dual-capable aircraft equipped to carry B61 tactical nuclear weapons in addition to conventional payloads.²⁰⁶ The U.S. and Germany have already tested the Tornado's ability to carry the new B61-12 tactical nuke.²⁰⁷

Although the Super Hornets are not yet certified to carry the B61 tactical weapons, Germany is planning on the Super Hornets as their dual-capable aircraft.²⁰⁸ Of the 45 Super Hornets, 15 will be an EA-18 Growler electronic warfare variant.²⁰⁹ However, the Defence Ministry's announcement is a "recommendation and not a commitment. According to MoD statements, the government currently plans

to introduce supporting documents to parliament in 2022 or 2023.”²¹⁰

The next German government will decide on the fate of the nation’s sharing posture. Germany, France, Italy, and Spain plan to acquire a collective fleet of Eurodrones.²¹¹ The Bundestag approved funding for the program in April 2021, but the nation cannot purchase ammunition for the drones, and operators cannot receive “tactical weapons training,” which leaves German drones, once procured, “weaponless for now.”²¹²

In March, the Ministry of Defence announced plans to upgrade its Patriot missiles to keep them in service until 2030 and to invest in drone technology rather than a next-generation air defense platform.²¹³

Germany operates the largest fleet of heavy transport aircraft in Europe²¹⁴ and has taken delivery of 35 of 53 A400M cargo aircraft ordered.²¹⁵ Germany is upgrading its fleet with funds made available in December 2020. According to the Ministry of Defence, “Aircraft that were previously only usable for logistical missions are to be made capable of tactical missions through additional equipment and preparations.”²¹⁶

In May 2018, the U.S. approved the sale of six C-130J Hercules aircraft and three KC-130J tankers to France and Germany, which are planning to create a joint capability.²¹⁷ A new joint training center for both aircraft in Normandy will break ground in 2021 and begin operations in 2024.²¹⁸ In June 2020, Germany announced an end to its P-3C ORION maritime patrol aircraft (MPA) modernization program.

In March 2021, the U.S. approved the sale of the P-8A Poseidon to Germany. As this book was being prepared for publication, a decision had not been made, but German procurement of the P-8 seems likely.²¹⁹

France. France has one of the most capable militaries within the NATO alliance and retains an independent nuclear deterrent capability. France rejoined NATO’s Integrated Command Structure in 2009 but remains outside the alliance’s nuclear planning group.

In 2020, France spent 2.04 percent of GDP on defense and 26.5 percent of defense spending on equipment, meeting both NATO benchmarks.²²⁰ France has safeguarded planned defense spending increases of \$2 billion in 2021. According to *Defense News*:

The €49.7 billion French defense budget for 2021 includes payment appropriations of €39.2 billion, which is an increase from the previous year, as planned in the 2019–2025 military program law. Of this, a record €22.3 billion is earmarked for modernizing equipment and buildings; €12.3 billion will go toward wages; and €4.6 billion is appropriated for operating costs.²²¹

While France has been increasing defense spending, one-third of the planned increases are not set to take effect until 2023 after the next general election, and a budgetary review set for this year. One major project is an upgrade to the French sea-based and air-based nuclear deterrent. The nation test fired the M51.2, the current three-stage, sea-land strategic ballistic missile (without a warhead) in April 2021 as part of a development program for the M51.3, which is expected in 2025.²²²

France’s sea-based deterrent is provided by four *Le Triomphant*-class ballistic missile submarines.²²³ The government launched the country’s third-generation ballistic missile submarine program in February 2021. Delivery of the first submarine is planned for 2035, with three additional subs to be delivered every five years thereafter.²²⁴ Armed Forces Minister Florence Parly has described the third-generation submarines in colorful terms as able to “hear better and defend themselves better whilst at the same time being more silent: They will not make more noise than a school of shrimp.”²²⁵

Other major naval procurements include \$1.09 billion through 2025 for the design phase of a new nuclear-powered aircraft carrier that will deploy 30 future combat aircraft systems and is planned to enter service in 2038.²²⁶ The

Suffren, the first of six new fifth-generation Barracuda-class nuclear-powered attack submarines, was commissioned in November 2020.²²⁷ France is procuring five defense and intervention frigates, with the first due in 2024 and the second and third in 2025.²²⁸ The *Alsace*, a FREMM multi-mission frigate delivered in April 2021, and the *Lorraine*, which is to be delivered in 2022, will have enhanced air defense capabilities in addition to the focus on anti-submarine warfare that characterizes the six FREMMs that were delivered between 2012 and 2019.²²⁹

In November 2020, Armed Forces Minister Parly announced the overhaul of the entire mine countermeasures systems by 2029.²³⁰ In the same month, France and the U.K. signed a production contract for the joint Maritime Mine Counter Measure (MMCM) autonomous minehunting system.²³¹

Army procurements include Kochi HK416 Assault Rifles,²³² 300 ANAFI USA micro-drones,²³³ and Serval Armored Vehicles, with 108 of the 364 Servals that have been procured to be delivered by 2022.²³⁴

Air Force procurements include an upgrade to the aerial refueling and airlift fleet. In February 2020, France received the second of two KC-130J Super Hercules.²³⁵ It also has been introducing new A330 MRTT Multi-Role Tanker Transport aircraft and as of April 30, 2021, had received three of a dozen ordered.²³⁶ France received its 18th A400M Atlas military transport aircraft in April 2021 and plans to have 25 in service by 2025.²³⁷ In October 2020, the government announced that the final 10 NH90 Tactical Troop Helicopters on order for delivery in 2025 and 2026 would be upgraded to meet special forces requirements.²³⁸

In January 2019, France signed a \$2.3 billion agreement with Dassault Aviation for development of the F4 Standard upgrade to the Rafale fighter aircraft. The upgrade includes “a number of new features, the most important of which is an improvement in the aircraft’s connectivity in both national and allied contexts, through software-defined radio, new links, and satellite communications.”²³⁹ The 28 Rafales,

to be delivered in 2025, “will include some F4 functionalities.”²⁴⁰ An additional 30 Rafales at full F4 configuration will be delivered by 2030.²⁴¹ It is expected that “[t]he F4 version will significantly improve the 4.5-generation fighter’s stealth capabilities, which although present in earlier versions to some extent failed to compete with fifth-generation combat aircraft.”²⁴²

In February 2021, France signed a contract to procure an additional 12 Rafales at the F3R standard by 2025 to replace fighters that had recently been sold to Greece.²⁴³ In May 2021, France, Germany, and Spain signed an agreement on the Future Combat Air System, which is to begin entering service in 2040.²⁴⁴

France established a 220-person Space Command under the Air Force in September 2019 and has committed to investing \$4.78 billion in its space capabilities by 2025.²⁴⁵ In January 2021, NATO approved a Center of Excellence for Military Space to be located alongside French Space Command in Toulouse.²⁴⁶ The first researchers arrived in 2021, and the center is to be fully staffed by 2025.²⁴⁷

France intends to have a “fully capable” system to defend its assets in space in place by 2030. “If our satellites are threatened,” Armed Forces Minister Parly has said, “we intend to blind those of our adversaries. We reserve the right and the means to be able to respond: that could imply the use of powerful lasers deployed from our satellites or from patrolling nano-satellites.”²⁴⁸ In March 2021, with German and U.S. space forces also participating, France launched its first military exercise in space “to evaluate its ability to defend its satellites and other defense equipment from an attack.”²⁴⁹

In December 2016, France opened a cyber-operational command.²⁵⁰ The French Military Programming Law for 2019–2025, enacted in the summer of 2018, added “an additional 1.6 billion euros for cyber operations along with 1,500 additional personnel for a total of 4,000 cyber combatants by 2025,” and in January 2019, France issued its “first doctrine for offensive cyber operations.”²⁵¹

France, which has the third-largest number of active-duty personnel in NATO,²⁵² withdrew the last of its troops from Afghanistan at the end of 2014, although all French combat troops had left in 2012. France continues to remain engaged in the fight against the Islamic State, deploying 600 troops in Operation Chammal.²⁵³ In February 2021, the *Charles de Gaulle* Carrier Strike Group deployed on a four-month operational deployment that includes support to Operation Chammal.²⁵⁴ In April 2021, the *Charles de Gaulle* Carrier Strike Group and *Dwight D. Eisenhower* Carrier Strike Group conducted dual operations in the Arabian Sea.²⁵⁵

France's contributions to NATO deterrence missions in Eastern Europe include deployment of 337 soldiers to Estonia as part of NATO's Enhanced Forward Presence.²⁵⁶ France also has taken part in Baltic Air Policing eight times, most recently flying out of Estonia beginning in April 2020,²⁵⁷ and is preparing for high-intensity warfare with a full-scale divisional exercise Orion for 2023 that could involve up to 10,000 troops in addition to air and naval units.²⁵⁸

The French military is also very active in Africa with more than 5,100 troops involved in anti-terrorism operations in Burkina Faso, Chad, Mali, Mauritania, and Niger as part of Operation Barkhane and more than 1,450 troops stationed in Djibouti, 950 in Côte d'Ivoire, 350 in Gabon, and 350 in Senegal.²⁵⁹ In addition, France has a close relationship with the United Arab Emirates. It has 650 troops stationed in the UAE,²⁶⁰ and a 15-year defense agreement between the countries has been in effect since 2012.

France is part of the EU-led Operation Sophia in the Mediterranean in response to human smuggling and other migration-related problems and is involved in other maritime missions across the globe.²⁶¹ It organized the April 2021 Le Pérouse naval exercise in the Bay of Bengal, which also included ships from Australia, Japan, India, and the U.S.²⁶² France also conducts occasional freedom-of-navigation operations in the Pacific. In February 2021, for example, it announced that it was sending

a nuclear-propelled attack submarine and warship on an eight-month mission to the Indian and Pacific Oceans.²⁶³

The French-led Awareness Strait of Hormuz initiative to help patrol the waters near Iran, based out of Abu Dhabi, became operational on February 25, 2020. The mandate for the initiative's military mission, Operation Agenor, was extended through 2021.²⁶⁴

Operation Sentinelle, launched in January 2015 to protect the country from terrorist attacks, is the largest operational commitment of French forces. Sentinelle and Operation Resilience, launched in March 2020 to help combat coronavirus,²⁶⁵ together represent a domestic commitment of 13,000 French forces.

In response to a series of terrorist attacks in southern France in October 2020, President Macron increased the number of troops deployed for Operation Sentinelle from 3,000 to 7,000.²⁶⁶ This decision could have a negative impact on overall readiness as one analysis notes. The IISS has noted that in "mid-2020, the army issued a strategy document, 'Operational Superiority 2030', which called for improved readiness in light of the risk of high-intensity conflict" but that "these plans could be affected by the decision, in October, to deploy more troops on the domestic Operation Sentinel mission."²⁶⁷ Frequent deployments, especially in Operation Sentinelle, have placed significant strains on French forces and equipment.²⁶⁸

The United Kingdom. America's most important bilateral relationship in Europe is its Special Relationship with the United Kingdom. From the sharing of intelligence to the transfer of nuclear technology, a high degree of military cooperation has helped to make the Special Relationship between the U.S. and the U.K. unique.

In 2020, the U.K. spent 2.32 percent of GDP on defense and 23.0 percent of its defense budget on equipment.²⁶⁹ In November 2020, the government announced plans to spend an additional "projected total of nearly \$22 billion" on defense across the next four years. "[T]his additional funding is on top of a

previous commitment to add \$2 billion more to the country's defense budget, with the combined planned increase being approximately \$24.1 billion through 2024."²⁷⁰ The new funding will be used in part for acquisitions, including frigates, Type 32 warships, and the U.K.'s Future Combat Air System. The U.K. is also standing up a Space Command and an Artificial Intelligence Center.²⁷¹

A 2020 report from the National Audit Office, however, warned that the U.K.'s 10-year defense modernization program could face a budget shortfall of as much as £13 billion (\$15 billion).²⁷² Defence Secretary Ben Wallace stated that the U.K. would need to make some "tough choices":

The decades of funding deferrals were about to hit the buffers. Bogus efficiencies, savings targets, hollowing out, and the lasting impacts of fighting the Iraq and Afghanistan conflicts are all things that continue to drain away precious resources long after the political leadership that directed them have exited the stage.²⁷³

In March 2021, the U.K. released its Integrated Review of Security, Defence, Development and Foreign Policy as well as a Defence Command Paper.²⁷⁴ The Defence Ministry's Command Paper, which lays out a plan for military modernization, includes plans for the creation of a new special operations Army Ranger Regiment that will "be able to operate discreetly in high-risk environments and be rapidly deployable across the world" and a new naval surveillance ship "aimed at protecting Britain's undersea cables and other critical national infrastructure."²⁷⁵

The paper also specifies significant cuts in capability, including a likely reduction in the planned procurement of 138 F-35s and the early retirement of C-130J transport aircraft. In addition, the U.K. army would be reduced from its current 82,000 troops to 72,500 troops by 2025—the smallest it has been since 1714.²⁷⁶ However, one analysis argues that the Army

reduction "is less than might appear" because "the Army has been well below its planned personnel numbers for some years."²⁷⁷ The loss of the C-130J will be felt as "[t]hese aircraft had been particularly favoured for Special Forces roles, which will now fall to the considerably larger A400M Atlas."²⁷⁸

Although the number of its active-duty servicemembers is small in comparison to the militaries of France and Germany, the U.K. maintains European NATO's most effective armed forces. Nevertheless, the Army admitted in October 2020 that it would miss targets set down in the 2015 Strategic Defence and Security Review (SDSR) to field a fully capable division with three brigades by 2025 (this will not take place now until the early 2030s).²⁷⁹ Because of procurement delays and funding issues, the Army will "only be able to deploy a combat division consisting of just a single armoured infantry brigade and an interim manoeuvre support brigade."²⁸⁰ As explained by Ben Barry of the IISS:

The Army was mandated [in the 2015 review] to deliver two armored infantry brigades, whereas they are now saying they can only generate one. They have enough vehicles for three infantry armored brigades, but my very strong suspicion is they haven't been spending money on spares. If they haven't got sufficient spare parts they will only risk sending one brigade on operations.²⁸¹

In early 2021, the Defence Ministry announced that it had been granted observer status for the Franco-German Main Ground Combat System program, which is slated to replace French and German Main Battle Tanks "around 2035."²⁸² In April 2019, the U.K. reported that it was planning to upgrade only 148 of its 227 remaining Challenger 2 main battle tanks, cutting its fleet by a third.²⁸³ The 79 other tanks would be scavenged for spare parts.²⁸⁴ Because Challenger tanks are not currently manufactured, sourcing spare parts is a continual problem.²⁸⁵ The British Army had

previously cut its tank forces by 40 percent in 2010.²⁸⁶ The Defence Command Paper laid out plans to spend £1.3 billion on upgrades to elevate the Challenger 2 to the Challenger 3.²⁸⁷ One former U.K. tank officer recently wrote that the small number of U.K. tanks available means that “our armoured brigades can only play a bit part in someone else’s military in alliance or coalition.”²⁸⁸

In March 2021, the U.K. announced that it would no longer upgrade its Warrior armored vehicles, but that they would remain in service through the mid-2020s.²⁸⁹ In 2019, the U.K. signed a £2.8 billion deal to procure around 500 Boxer armored vehicles.²⁹⁰ As a result of the decision to stop upgrading the heavier Warriors, the Army is “conducting an analysis on potential lethality enhancements of Boxer vehicle.”²⁹¹

As of March 2021, the U.K. had taken delivery of 21 F-35Bs of 48 ordered.²⁹² The total number of F-35s that will be procured may not be known until 2025.²⁹³ RAF F-35s based at Akrotiri, Cyprus, flew operational sorties for the first time in June 2019.²⁹⁴ In 2019, the U.K. took delivery of the last of 160 Typhoon aircraft, all of which were expected to stay in service until 2040.²⁹⁵ However, in March, the U.K. announced that 24 Tranche 1 Typhoons will be retired by 2025.²⁹⁶ Project Centurion, a \$515.83 million Typhoon upgrade to integrate additional Storm Shadow long-range cruise missiles and Brimstone precision attack missiles, was completed in 2018 and enabled the U.K. to retire its fleet of Tornado aircraft.²⁹⁷ The U.K. recently detailed a £2 billion investment over the next four years in development of the Tempest, a sixth-generation fighter to be delivered in 2035.²⁹⁸

The RAF operates the largest fleet of air-to-air refuelers in Europe, which is noteworthy because of the severe shortage of this capability on the continent.²⁹⁹ Along with the U.K., the U.S. has produced and jointly operated an intelligence-gathering platform, the RC-135 Rivet Joint aircraft, which has already seen service in Mali, Nigeria, and Iraq and is now part of the RAF fleet.³⁰⁰

The U.K. operates seven C-17 cargo planes and has started to bring the European A400M cargo aircraft into service after years of delays. By April 2021, Britain had taken delivery of 20 of 22 A400M heavy transport aircraft ordered.³⁰¹

The Sentinel R1, an airborne battlefield and ground surveillance aircraft, flew its last operational flight in February 2021.³⁰² That same month, the U.K. took delivery of the fifth of nine P-8 Poseidon maritime patrol aircraft (MPA) that are to be based at RAF Lossiemouth in Scotland. The order will be completed by the end of the year.³⁰³ In 2018, retired Air Vice-Marshal Andrew Roberts testified to Parliament that “capable though the P-8 may be, the number of aircraft planned is undoubtedly inadequate to fulfil even the highest priority tasks likely to be assigned to the force in tension and hostilities.”³⁰⁴

The U.K. reportedly also plans to procure approximately 45 medium helicopters to remain in service until the mid-2040s. This platform will replace four different helicopter platforms currently in service.³⁰⁵

The Royal Navy has lost 40 percent of its fleet since the end of the Cold War.³⁰⁶ Of the 55 ships lost since the early 1980s, half are frigates, and the U.K. now operates only 13.³⁰⁷ In five years, the Royal Navy will have only 10 frigates.³⁰⁸ According to one analyst, such a force “can’t possibly handle all of [the] tasks [required of it]. Especially considering that, at any given time, just a third of the vessels will be available for operations. The others will be in maintenance or refit or working up for deployments.”³⁰⁹ However, as construction of destroyers and frigates picks up steam, “the ambition is to rebuild to more than 20 by the end of the decade.”³¹⁰

The Royal Navy’s surface fleet is based on the new Type-45 destroyer and the older Type-23 frigate. The latter will be replaced by eight Type-26 Global Combat Ships sometime in the 2020s.³¹¹ The Type-26 Global Combat Ships are meant to handle a flexible range of tasks, but it remains unclear whether all of their weapons capabilities will be funded.³¹² The U.K.

announced a procurement of five T31e frigates, which are scheduled to enter service in 2023,³¹³ the year the first of the Type-23 frigates is slated to be phased out of service.³¹⁴

HMS *Queen Elizabeth* set sail on its first operational deployment in May 2021.³¹⁵ The Carrier Strike Group deployment, which includes a U.S. destroyer and a Dutch frigate, will “last for 28 weeks and cover 26,000nm” and “will include visits to the waters of more than 40 countries” and “a wide range of exercise and joint operations.” Specifically, “Queen Elizabeth is scheduled to conduct dual-carrier operations in the Mediterranean with the French carrier Charles de Gaulle, as well as exercise with a number of navies, including that of Israel. Elements of the CSG will also conduct maritime security operations in the Black Sea.” In addition:

F-35B fighters from the carrier are expected to fly combat missions over Syria and Iraq from the eastern Mediterranean as part of Operation Shader, the UK’s contribution to the anti-Daesh campaign. The CSG will then move further east to the Indian and Pacific Oceans, exercising with the UAE along the way and visiting India. Further visits are planned to Japan, South Korea, and Singapore, underlining the United Kingdom’s new shift in defense focus towards the Pacific. The group will participate in Exercise Bersama Lima with forces from Australia, Malaysia, New Zealand, and Singapore. The exercise coincides with the 50th anniversary of the Five Powers Defence Agreement between the five nations.³¹⁶

The U.K.’s *Queen Elizabeth*-class carriers are the largest operated in Europe. A second in this class, HMS *Prince of Wales*, will be the larger of the two carriers and was commissioned in December 2019.³¹⁷ However, the *Prince of Wales* has been beset by a series of leaks that have cost £3.3 million and necessitated the cancellation of planned fixed-wing sea trials with F-35s off the U.S. east coast that

were scheduled for January 2021.³¹⁸ The *Prince of Wales* returned to the sea in May 2021 after five months of repairs.³¹⁹ Each carrier is capable of supporting 36 F-35s, but the U.K. currently plans to procure only 48.³²⁰

The Royal Navy is also introducing seven *Astute*-class attack submarines as it phases out its older *Trafalgar*-class subs. The fifth *Astute*-class submarine was launched in April 2021.³²¹ Crucially, the U.K. maintains a fleet of 13 Mine Counter Measure Vessels (MCMVs) that deliver world-leading capability. As a supplement, the U.K. began minehunting and survey operations using unmanned surface vessels (USVs) in March 2020.³²²

Perhaps the Royal Navy’s most important contribution is its continuous-at-sea, submarine-based nuclear deterrent based on the *Vanguard*-class ballistic missile submarine and the Trident missile. In July 2016, the House of Commons voted to renew Trident and approved the manufacture of four replacement submarines to carry the missile.

The U.K. plans to procure four new *Dreadnought*-class ballistic missile submarines, which are expected to have a 30-year life span, at a cost of £31 billion (plus an additional contingency funding stream of £10 billion for any potential cost overruns), with a completion date of the early 2030s for the first, HMS *Valiant*.³²³ In May 2021, the Ministry of Defence ordered a review of the program because of delays that continue to push back the date of completion.³²⁴

U.K. defense forces have been plagued in recent years by vacancies. “The personnel strength of the British armed forces continues to decrease,” according to the IISS, “with an overall deficit of 7.6% in 2019, compared with 6.2% the previous year. Although recruitment initiatives continue, shortages remain in key specialist areas, including 18% of required Royal Air Force (RAF) pilots.”³²⁵ However, initial reports suggest that the pandemic may have helped to fuel an increase in military recruitment in 2020.³²⁶

Despite these issues, the U.K. remains a leader inside NATO, serving as the framework

nation for NATO's EFP in Estonia and a contributing nation for the U.S.-led EFP in Poland. The Royal Air Force has taken part in Baltic Air Policing six times since 2004, most recently in May–August 2020.³²⁷ In April 2021, four RAF Typhoons were deployed to Romania to take part in NATO's enhanced Air Policing (eAP), the third time the RAF has participated in eAP since 2017.³²⁸ From November–December 2019, four U.K. typhoons and 120 personnel took part in Icelandic Air Policing.³²⁹

Before its withdrawal early in 2021, the U.K. maintained a force of 750 troops in Afghanistan as part of NATO's Resolute Support Mission.³³⁰ It also contributes to NATO's Kosovo Force;³³¹ NATO's Mine Countermeasures Group One;³³² and, as an active part of the anti-ISIS coalition, Operation Shader.³³³ In February 2021, the U.K. announced that it planned to increase the number of British troops (currently "about 100 soldiers") engaged in training Iraqi security forces.³³⁴

Italy. Italy hosts some of the U.S.'s most important bases in Europe, including the headquarters of the 6th Fleet. It also has NATO's fifth-largest military³³⁵ and one of its more capable despite continued lackluster defense investment. In 2020, Italy spent only 1.39 percent of GDP on defense, but it did spend 24.6 percent of its defense budget on equipment, meeting the second NATO spending benchmark.³³⁶ Italy will increase its defense budget by 9.6 percent in 2021, a \$1.7 billion year-over-year increase. Procurement spending will increase about 26 percent in 2021 over 2020 levels, and "Maintenance and Operations rises 23 percent to €2.15 billion."³³⁷

Key procurements include 150 Centauro II 8x8 tank destroyers, 650 Lince 2 light multi-role vehicles, 156 VBM Freccia 8x8 infantry combat vehicles, T-345 and T-346 jet trainers, Italy's first HH-101 Combat Search and Rescue helicopter, and 16 CH-47F helicopters.³³⁸ Italy also plans to purchase 60 F-35As for the air force and 30 F-35Bs; the F-35Bs will be divided equally between the air force and navy.³³⁹ A government-owned plant for final assembly of the F-35 is located in Cameri, Italy.

In December 2020, Italy signed the Future Combat Air System (FCAS) Cooperation agreement with Sweden and the U.K. The agreement covers "the cooperation for research, development, and 'joint-concepting'" of the sixth-generation *Tempest* fighter.³⁴⁰ In April, Italy's Military Chief of Staff General Enzo Vecciarelli suggested that the *Tempest* might possibly employ directed energy weapons to defeat hypersonic missiles.³⁴¹

Key naval procurements include plans for four U212A submarines, "a special operations & diving operations/Submarine Rescue Ship," and a new anti-ship missile system.³⁴² Italy launched the last of 10 new FREMM frigates in January 2020.³⁴³ For the Italian Navy, "[t]he expected retirement of much of the naval fleet has triggered a long-term replacement plan which includes the potential acquisition of two next-generation destroyers to replace the ageing Luigi Durand de la Penne-class vessels."³⁴⁴

The Ministry of Defence's "Multi-year Planning Document 2020–2022," released in November 2020, launched "de-risking studies for two next generation destroyers under the DDX program to replace the Navy's two *Admiral*-class destroyers," with the new destroyers to be delivered in 2028.³⁴⁵ Other defense priorities include acquiring a "multi-mission, multi-sensor" Gulfstream G-550 jet for "command-and-control, 'electronic superiority' and 'electronic protection of forces.'"; the launch of new surveillance and communications satellites; and needed munitions.³⁴⁶

Italy's focus is the Mediterranean region where it participates in a number of stabilization missions including NATO's Sea Guardian,³⁴⁷ the EU's Operation Sophia,³⁴⁸ and the Italian Navy's own Operation Mare Sicuro (Safe Sea) off the Libyan coast.³⁴⁹ Additionally, 400 Italian troops are part of the bilateral Mission of Assistance of Support in both Misrata and Tripoli.³⁵⁰

Despite a southern focus, Italy contributes to Standing NATO Mine Countermeasures Group Two³⁵¹ as well as the EFP battalion in Latvia (200 troops);³⁵² previously NATO's Resolute Support mission in Afghanistan

(895 troops),³⁵³ and Operation Prima Parthica (600 troops, partly to help train Iraqi Security Forces).³⁵⁴ Italian Tornado jets operating out of the Ahmed Al Jaber airbase in Kuwait are performing reconnaissance missions in support of the coalition to defeat the IS.³⁵⁵ With 542 troops, Italy is the second largest contributor to KFOR after the United States.³⁵⁶

The Italian Air Force has taken part in Baltic Air Policing five times, most recently with Italian Typhoons operating out of Lithuania from September 2020–April 2021.³⁵⁷ In April 2021, Italy deployed four F-35As to Estonia, marking the first time the F-35 has taken part in Baltic Air Policing.³⁵⁸ From May–August 2019, Italy’s air force took part in NATO’s enhanced Air Policing in Romania, having previously participated in “a four-month enhanced Air Policing deployment to Bulgaria in 2017.”³⁵⁹ The Italian Air Force has deployed to Iceland to perform air patrols six times since 2013, most recently in June–July 2020 when six F-35As were deployed to Iceland.³⁶⁰

Poland. Situated in the center of Europe, Poland shares a border with four NATO allies, a long border with Belarus and Ukraine, and a 144-mile border with Russia’s Kaliningrad Oblast, a Russian enclave between Poland and Lithuania on the Baltic Sea. Poland also has a 65-mile border with Lithuania, making it the only NATO member state that borders any of the Baltic States, and NATO’s contingency plans for liberating the Baltic States in the event of a Russian invasion reportedly rely heavily on Polish troops and ports.³⁶¹

Poland has an active military force of 114,050 including a 58,500-person army with 808 main battle tanks.³⁶² Poland also has a Territorial Defense Force (TDF) that is intended “to increase the strength of the armed forces and the defense capabilities of the country,” according to former Minister of Defense Antoni Macierewicz, and “is also the best response to the dangers of a hybrid war like the one following Russia’s aggression in Ukraine.”³⁶³ The TDF is mostly volunteer; “its personnel combine their civilian careers with limited military service of a minimum of two days twice a month

and an annual two-week camp.”³⁶⁴ Its planned 17 brigades will be distributed across the country.³⁶⁵ The force, which will number 53,000 by 2026,³⁶⁶ constitutes the fifth branch of the Polish military, subordinate to the Minister of Defense.³⁶⁷ National Defense Minister Mariusz Blaszczak has stated that the TDF’s performance combating COVID-19 has “impeccably proved their importance and effectiveness.”³⁶⁸

Poland is also investing in cyber capabilities. “Plans for a 2,000-strong cyberdefence force were also unveiled in 2019,” according to the IISS *Military Balance*. “Centralised within the defence ministry, this force is due to be operational before 2025. A cyber component was also set up in the TDF in 2019.”³⁶⁹ In November 2020, the U.S. and Poland signed an enhanced defense cooperation agreement that increased the number of U.S. forces stationed in Poland by 1,000.

In 2019, Poland spent 2.31 percent of GDP on defense and 29.0 percent of its defense budget on equipment, reaching both NATO benchmarks.³⁷⁰ Pursuant to increases in defense spending adopted in October 2017, Poland should be spending 2.5 percent of GDP on defense in 2030.³⁷¹ In January 2021, Minister Blaszczak stated that Poland remained committed to 2 percent but that “[t]he COVID-19 pandemic will most likely have an impact on national security policies, including defense budgets.”³⁷²

Poland is making major investments in military modernization and is planning to spend \$133 billion on new capabilities by 2035, as envisioned in the Defense Ministry’s Technical Modernization Plan for 2021–2035, which was signed in October 2019.³⁷³ In addition, several major acquisitions have been announced in recent years. For example:

- In January 2020, Poland signed a \$4.6 billion deal to purchase 32 F-35As with “deliveries from 2026.”³⁷⁴ A group of 24 Polish pilots completed F-35 simulator training in Arizona early in 2021.³⁷⁵ Poland has announced that the F-35s will be based in Lask.³⁷⁶

- In March 2018, in the largest procurement contract in its history, Poland signed a \$4.75 billion deal for two Patriot missile batteries.³⁷⁷ The Patriot batteries are scheduled for delivery between 2022 and 2025.³⁷⁸
- In February 2019, Poland signed a \$414 million deal to purchase 20 high-mobility artillery rocket systems from the U.S. for delivery by 2023.³⁷⁹
- In April 2019, it signed a \$430 million deal to buy four AW101 helicopters that will provide anti-submarine warfare and search-and-rescue capabilities and are to be delivered by the end of 2022.³⁸⁰
- In February 2018, Poland joined an eight-nation “coalition of NATO countries seeking to jointly buy a fleet of maritime surveillance aircraft.”³⁸¹
- Poland has been in negotiations to purchase 180 Javelin anti-tank weapons. In March 2020, the State Department approved the potential sale, which would be worth \$100 million.³⁸²
- In April 2021, the U.S. and Poland signed an agreement for Poland to acquire five retrofitted C-130H Hercules transport aircraft (decommissioned by the U.S. in 2017) by 2024, with the first to arrive by the end of 2021.³⁸³
- In July 2021, Poland announced a deal to procure 250 M1A2 Abrams SEPv3 tanks with deliveries to begin in 2022.³⁸⁴

Although Poland’s focus is territorial defense, it had 290 troops deployed in Afghanistan as part of NATO’s Resolute Support Mission.³⁸⁵ Poland’s air force has taken part in Baltic Air Policing nine times since 2006, most recently operating four F-16s out of Ämari Air Base in Estonia from January–April 2020.³⁸⁶ In 2020, Poland was the lead for NATO’s VJTF,

and approximately half of the 6,000 troops in the VJTF’s Spearhead Force were Polish.³⁸⁷ Poland also is part of NATO’s EFP in Latvia³⁸⁸ and has 229 troops in NATO’s KFOR mission in Kosovo.³⁸⁹

In addition, “up to 350 soldiers and employees” are deployed to Iraq, Jordan, Kuwait, and Qatar as part of Operation Inherent Resolve.³⁹⁰ In April 2021, around 80 Polish soldiers deployed to Turkey as part of a NATO assurance mission to assist Turkey by providing additional maritime patrols over the Black Sea and the Mediterranean.³⁹¹ Finally, Poland’s commitment to NATO’s tailored forward presence in Bulgaria and Romania includes about 250 soldiers and civilians.³⁹²

Turkey. Turkey remains an important U.S. ally and NATO member, but the increasingly autocratic presidency of Recep Tayyip Erdogan and a thaw in relations between Turkey and Russia have introduced troubling challenges. Turkey has been an important U.S. ally since the closing days of World War II. During the Korean War, it deployed 15,000 troops and suffered 721 killed in action and more than 2,000 wounded. Turkey joined NATO in 1952, one of only two NATO members (the other was Norway) that had a land border with the Soviet Union. Today, it continues to play an active role in the alliance, but not without difficulties.

Following an attempted coup in July 2016, thousands of academics, teachers, journalists, judges, prosecutors, bureaucrats, and soldiers were fired or arrested. Specifically, according to a Reuters account, “some 80,000 people were held pending trial and some 150,000 civil servants, military personnel and others were sacked or suspended. More than 20,000 people have been expelled from the Turkish military.”³⁹³ In May 2019, according to Deutsche Welle, observers estimated that “3,000 inmates are being held in isolation.”³⁹⁴

The post-coup crackdown has had an especially negative effect on the military. As noted, 20,000 members have been dismissed since 2016 with deleterious effects on those remaining.³⁹⁵ The IISS reported that “[t]he effect on officer morale of these continuing purges was

exacerbated by the widespread suspicion that promotions and appointments were increasingly politicised, with outspoken supporters of Erdogan fast-tracked for promotion.”³⁹⁶ In April 2021, Turkish authorities detained 10 former admirals that were part of a group of more than 100 retired naval officers who, in an open letter, criticized a government plan to construct a canal in Istanbul.³⁹⁷

Turkey’s military is now suffering from a loss of experienced generals and admirals as well as an acute shortage of pilots. The dismissal of more than 300 F-16 pilots, for instance, greatly exacerbated existing pilot shortages.³⁹⁸ A third of the dismissed pilots were in the leadership echelon, commanding squadrons, fleets, or bases.³⁹⁹ A request to the U.S. to send trainers was denied, as was a Turkish plan to utilize Pakistani trainers to fly the F-16.⁴⁰⁰ Furthermore, as one analyst notes, “The shortage of pilots was not the only problem. Many of the veteran staff members, especially at the operations and logistics centers that help pilots fly successful missions, were also removed, hampering the close coordination between the air and land elements of the air force. Hundreds of engineers on the ground were also removed.”⁴⁰¹

The dilapidated condition of its air force is partly why Turkey has decided to acquire new ground-based air defense systems.⁴⁰² In December 2017, Turkey signed a \$2.5 billion agreement with Russia to purchase S-400 air defense systems, and delivery began in July 2019.⁴⁰³ “The decision to purchase two S-400 air-defence systems from Russia,” reports the IISS, “was made by the president without detailed consultation with the armed forces about the possible technical and strategic repercussions.”⁴⁰⁴ U.S. officials have expressed grave concerns about this purchase and suspended Turkey from the F-35 program in July 2019, stating that “[t]he F-35 cannot coexist with a Russian intelligence collection platform that will be used to learn about its advanced capabilities.”⁴⁰⁵

Turkey tested the system against its F-16s in November 2019 and further tested the system at Sinop near the Black Sea in October 2020.⁴⁰⁶

In December, a U.S. official stated, “We object to Turkey’s purchase of the system and are deeply concerned with reports that Turkey is bringing it into operation.”⁴⁰⁷ That same month, in response to Turkey’s purchase of the S-400 systems, the U.S. announced sanctions that would take effect in April 2021.⁴⁰⁸ Fearful of the likely effect of these sanctions, Turkey has been stockpiling spare F-16 parts since 2019.⁴⁰⁹

Turkish defense firms make “more than 800 components...for the F-35 as part of a nine-nation consortium,” and Turkey’s suspension from the program could cost the Turkish defense industry as much as \$10 billion.⁴¹⁰ (The U.S. Government Accountability Office specifies more precisely that 1,005 parts are produced by Turkish firms.⁴¹¹) Despite Turkey’s removal from the program, components of the F-35 will continue to be built in Turkey until 2022.⁴¹² In his posture statement to Congress, General Wolters downplayed the lasting potential of the Turkish–Russian rapprochement: “Turkey retains a pivotal role in countering Russia. Ankara’s relationship with Moscow remains competitive and transactional, with Turkish engagement often aimed at constraining Russian behavior.”⁴¹³

Partly because of its manned aircraft issues, Turkey is investing heavily in armed drones. These drones, of which it has approximately 130, have played a significant role in Turkish operations in Syria.⁴¹⁴ Here too, however, the country remains reliant on foreign companies. “While Turkish companies have assembled the drones,” according to the Congressional Research Service, “they apparently rely on Western countries for some key components, including engines, optical sensors, and camera systems.”⁴¹⁵

In October 2019, Turkey launched a major offensive in Syria against the Kurdish-led Syrian Democratic Forces (SDF), partly to create a buffer zone near the Turkish border. The largest Kurdish armed faction within the SDF is the People’s Protection Units (YPG), an offshoot of the Kurdistan Workers’ Party (PKK), a U.S.-designated terrorist group that has waged

war against Turkey off and on since 1984. The offensive led to the creation of a buffer zone jointly patrolled by Turkish and Russian forces following an agreement between Presidents Erdogan and Putin in Sochi.

In February 2020, Russian-backed Syrian regime forces launched an attack on Idlib, the last remaining stronghold of forces opposed to Assad. Turkish forces opposed the offensive and lost 36 soldiers before Turkey and Russia agreed to a cease-fire.⁴¹⁶ The cease-fire was extended in February 2021.⁴¹⁷

Turkish threats to renege on a 2016 agreement with the EU under which the EU paid Turkey to stop the flow of migrants to Europe are a consistent and enduring source of friction.⁴¹⁸ In addition, Turkey and Greece remain at odds over maritime boundaries and drilling rights between their two nations in the eastern Mediterranean as well as drilling rights off the Cypriot coast. Tensions flared in 2020, and maritime talks between Turkey and Greece are ongoing. Turkey is reportedly scouting a location in the Turkish Republic of Northern Cyprus for a naval base⁴¹⁹ and began flying UAVs out of Geçitkale Airport in December 2019.⁴²⁰

U.S. security interests in the region lend considerable importance to America's relationship with Turkey. Turkey is home to Incirlik Air Base, a major U.S. and NATO air base, but it was reported early in 2018 that U.S. combat operations at Incirlik had been significantly reduced and that the U.S. was considering permanent reductions. Restrictions on the use of Incirlik for operations in Syria have proven problematic. "[The] American operation to kill Islamic State leader Abu Bakr al-Baghdadi in Syria," for example, "saw U.S. forces use a base in Iraq instead of the much closer Incirlik, requiring a round trip of many hours."⁴²¹ The U.S. reportedly began reviewing plans to remove nuclear weapons from Incirlik in 2019, but no such decision has yet been made.⁴²²

U.S. officials, however, have sought to focus on the positive aspects of U.S.–Turkish bilateral relations. In December 2019, General Wolters noted that he "saw no cracks in the armor in Turkey's willingness to work side by side as

a NATO partner with us."⁴²³ Two positive signs have been the use of Turkey's Konya Air Base to support NATO AWACS aircraft involved in counter-ISIS operations⁴²⁴ and Spain's operation of a Patriot system in the Turkish city of Adana under NATO auspices.⁴²⁵ Turkey also hosts a crucial radar at Kurecik, which is part of NATO's BMD system, and the U.S. is reportedly building a second undisclosed site (site K) near Malatya, which is home to an AN/TPY-2 radar with a range of up to 1,800 miles.⁴²⁶

In January 2021, Turkey took over command of NATO's Very High Readiness Joint Task Force. According to NATO:

Built around Turkey's 66th Mechanised Infantry Brigade of around 4,200 troops, a total of around 6,400 soldiers will serve on the VJTF. Units from Albania, Hungary, Italy, Latvia, Montenegro, Poland, Romania, Slovakia, Spain, the UK, and the United States will also serve on the force, which is part of the alliance's larger NATO Response Force. Turkey has made substantial investments into the unit—amongst the most mobile in NATO—particularly in its logistics and ammunition requirements planning. The latest models of Turkish armed vehicles, anti-tank missiles and howitzers have been allocated to the force.⁴²⁷

Before May of 2021, Turkey maintained more than 600 troops in Afghanistan as part of NATO's Resolute Support Mission.⁴²⁸ The Turks also have contributed to a number of peacekeeping missions in the Balkans, still maintain 317 troops in Kosovo,⁴²⁹ and have participated in counterpiracy and counterterrorism missions off the Horn of Africa in addition to deploying planes, frigates, and submarines during the NATO-led operation in Libya. Turkey currently contributes to the Standing NATO Mine Countermeasures Group Two⁴³⁰ and Standing NATO Maritime Group Two.⁴³¹

Turkey has a 355,200-strong active-duty military,⁴³² which is NATO's second largest after that of the United States. However, in June 2019:

President Recep Tayyip Erdogan ratified a new law that reduced the length of compulsory military service from 12 to six months. On payment of a fee, compulsory service can be reduced further to one month of basic training. The changes were expected to reduce the overall size of the armed forces by around 35%, as part of Turkey's long-term plan to create compact and fully professional armed forces.⁴³³

Turkish defense procurement has become more convoluted and more directly tied to President Erdogan. A December 2017 decree placed the Undersecretariat for Defense Industries (SSB), which is responsible for procurement, under Erdogan's direct control.⁴³⁴ Since then, Turkey's defense procurement has suffered from a "brain drain." In January 2019, it was reported that 272 defense officials and engineers had left for jobs overseas since the change. Of the 81 who responded to an SSB survey, "41 percent are in the 26–30 age group. 'This highlights a trend among the relatively young professionals to seek new opportunities abroad,' one SSB official noted."⁴³⁵

Another challenge is continued reliance on foreign components despite a focus on indigenous procurement. For example, Turkey's procurement of 250 new Altay main battle tanks, the first of which had been scheduled for May 2020, is indefinitely delayed. The tank relies on a German-made engine and transmission, as well as French armor, but the technology transfer was not approved. Turkey has sought alternative suppliers such as South Korea and is looking to produce domestic components, but procurement remains delayed.⁴³⁶

Similarly, Turkey's procurement of 50 T-129 attack helicopters will likely be delayed for more than four years to wait for production of a domestic engine to replace one produced by American and British firms.⁴³⁷ Because of a lack of engines, Turkey has been unable to deliver 30 T129s to Pakistan as part of a 2018 deal, and Pakistan granted a further six-month extension in March 2021.⁴³⁸ Also in March 2021,

Turkey announced plans to produce a larger T929 helicopter gunship using a Ukrainian engine, but the helicopter "is not expected to make its first flight until 2024, and won't enter service until the end of the decade."⁴³⁹

Additionally, the French government has blocked development of anti-ballistic missiles because of Turkey's actions in Syria.⁴⁴⁰ President Erdogan has personally lobbied French President Macron to allow Turkey to purchase Eurosam's SAMP/T missile-defense systems.⁴⁴¹ After its removal from the F-35 program, Turkey is purportedly planning to produce a domestic fifth-generation jet, the TF-X National Combat Aircraft, by 2023.⁴⁴²

Other major procurements include 350 T-155 Firtina 155mm self-propelled howitzers⁴⁴³ and six Type-214 submarines, the first of which will enter service in 2022 and the last of which is to be delivered in 2027.⁴⁴⁴

In February 2019, Turkey announced upgrades of four *Preveze*-class submarines, to take place from 2023–2027.⁴⁴⁵ In the same month, Turkey launched an intelligence-gathering ship, the TCG *Ufuk*, described by President Erdogan as the "eyes and ears of Turkey in the seas."⁴⁴⁶ In December 2019, the SSB released its "Strategic Plan 2019–2023," which in part sets targets of 75 percent of Turkish military needs being supplied domestically by 2023 and defense exports being increased to \$10.2 billion by 2023. The latter target is almost certainly not likely to be met.⁴⁴⁷ In 2020, Turkish exports declined by 17 percent to \$2.279 billion, down from \$2.74 billion in 2019.⁴⁴⁸

The Baltic States. The U.S. has a long history of championing the sovereignty and territorial integrity of the Baltic States that dates back to the interwar period of the 1920s. Since regaining their independence from Russia in the early 1990s, the Baltic States have been staunch supporters of the transatlantic relationship. Although small in absolute terms, the three countries contribute significantly to NATO in relative terms. In 2021, the U.S. will provide \$169 million in military aid to the Baltics.⁴⁴⁹

Estonia. Estonia has been a leader in the Baltics in terms of defense spending, with

defense spending equal to 2.33 percent of GDP and 25.4 percent of defense spending on new equipment in 2020,⁴⁵⁰ and will spend 2.29 percent of GDP on defense in 2021 after a defense budget increase of nearly \$36 million.⁴⁵¹ Estonia's Ministry of Defence Development Plan 2022–2025, released in March 2021, includes planned investments of €135 million for ammunition along with improved personal protection for soldiers, continued development of a modular field hospital, and continued procurement of self-propelled artillery, coastal defenses, and anti-tank weapons.⁴⁵²

Munitions are a major component of Estonian procurement. Estonia's Defense Investments Center, according to the head of its procurements department, will "concentrate on procuring long-range anti-tank missiles Spike, Mistral air defense missiles and small caliber munitions in the near future."⁴⁵³

Although the Estonian armed forces total only 7,100 active-duty service personnel (including the army, navy, and air force),⁴⁵⁴ they are held in high regard by their NATO partners and punch well above their weight inside the alliance. Between 2003 and 2011, 455 Estonians served in Iraq. Perhaps Estonia's most impressive deployment has been to Afghanistan: More than 2,000 Estonian troops were deployed between 2003 and 2014, and they sustained the second-highest number of deaths per capita among all 28 NATO members.

In 2015, Estonia reintroduced conscription for men ages 18–27, who must serve eight or 11 months before being added to the reserve rolls.⁴⁵⁵ The number of Estonian conscripts will increase from 3,200 to 4,000 by 2026.⁴⁵⁶

Estonia has demonstrated that it takes defense and security policy seriously, focusing on improving defensive capabilities at home while maintaining the ability to be a strategic actor abroad. Estonia is acquiring a total of 18 South Korean-built K9 self-propelled howitzers at a total cost of €66 million.⁴⁵⁷ It received the first units in October 2020, and the remaining units are scheduled to arrive by 2023.⁴⁵⁸ Estonia has prioritized anti-tank weapons and took

delivery of 128 Javelins from the United States in February 2020.⁴⁵⁹

In October 2020, Estonia withdrew from a joint armored vehicle development program with Latvia and Finland for financial reasons, putting off new armored vehicle acquisition until the end of the decade.⁴⁶⁰ In 2019, it received two C-145A tactical transport aircraft donated by the U.S.⁴⁶¹ In July 2019, Estonia signed a \$24 million deal to purchase 16,000 rifles from an American arms company, allowing the nation to phase out older Soviet and Israeli weapons.⁴⁶² Estonia has earmarked €46 million for mines and short-range to medium-range coastal defenses and has indicated an interest in joint procurement with Latvia.⁴⁶³

According to Estonia's National Defence Development Plan for 2017–2026, "the size of the rapid reaction structure will increase from the current 21,000 to over 24,400."⁴⁶⁴ In addition, Estonia's cyber command became operational in August 2018 and is expected to include 300 people when it reaches full operational capability in 2023.⁴⁶⁵ U.S. and Estonian cyber commands train together. In the fall of 2020, for example, they trained in Estonia to help search for and block incoming cyber threats from Russia.⁴⁶⁶

In 2017, Estonia and the U.S. strengthened their bilateral relationship by signing a defense cooperation agreement that builds on the NATO–Estonia Status of Forces Agreement, further clarifying the legal framework for U.S. troops in Estonia.⁴⁶⁷ Estonian forces have participated in a number of operations including 45 soldiers in Resolute Support before its end,⁴⁶⁸ a vessel as part of the Standing NATO Mine Countermeasures Group One,⁴⁶⁹ about 95 troops in the French-led Operation Barkhane in Mali,⁴⁷⁰ and a Special Forces contribution to France's Task Force Takuba in the Sahel, which began in the latter half of 2020.⁴⁷¹ Estonian troops also take part in the U.S.-led Operation Inherent Resolve in Iraq along with NATO Mission Iraq.⁴⁷²

Latvia. Latvia's recent military experience also has been centered on operations in Iraq and Afghanistan with NATO and U.S. forces.

Latvia deployed more than 3,000 troops to Afghanistan and between 2003 and 2008 deployed 1,165 troops to Iraq. In addition, it has contributed to a number of other international peacekeeping and military missions. A recent analysis notes that “Latvia has no requirement and therefore no capacity to independently deploy and sustain forces beyond its national boundaries, although the armed forces have taken part in a range of NATO and EU missions.”⁴⁷³

Today, despite a military that consists of only 6,250 full-time servicemembers,⁴⁷⁴ Latvia contributes to operations abroad. It deployed troops to NATO’s Resolute Support Mission until the mission’s completion⁴⁷⁵ and participates in Operation Inherent Resolve in Iraq, where the mandate for Latvian soldiers taking part runs until February 2022,⁴⁷⁶ and NATO’s VJTF⁴⁷⁷ as well as a number of EU flagged missions.

Latvia’s National Defence Concept 2020–2024 states that “the National Guard must reach at least 10,000-men mark by 2024.”⁴⁷⁸ Latvia “is investing \$56 million annually through 2022 on military infrastructure, with two-thirds of this amount being spent to upgrade Ādaži military base, headquarters of the Canadian-led EFP battlegroup.”⁴⁷⁹

In 2020, Latvia spent 2.27 percent of GDP on defense and 26.0 percent of its defense budget on equipment, exceeding both NATO benchmarks.⁴⁸⁰ In February 2019, Latvia purchased four UH-60M Black Hawk helicopters from the United States.⁴⁸¹

In 2018, Latvia signed a \$133 million agreement to purchase Spike precision-guided tactical missiles, the first of which were delivered in February 2020.⁴⁸² A new team trainer for the missiles was installed in October 2020.⁴⁸³ Latvia has also expressed interest in procuring a medium-range ground-based air-defense system (GBADS). Joint procurements include Carl Gustav M-4 anti-tank rifles with Estonia in 2020 and armored vehicles with Finland, which is slated to begin manufacturing in 2021.⁴⁸⁴

Lithuania. Lithuania is the largest of the three Baltic States, and its armed forces total

22,000 active-duty troops.⁴⁸⁵ It reintroduced conscription in 2015 and lowered the age for compulsory service in December 2019.⁴⁸⁶

Lithuania has shown a steadfast commitment to international peacekeeping and military operations. Between 2003 and 2011, it sent 930 troops to Iraq. Since 2002, around 3,000 Lithuanian troops served in Afghanistan. Lithuania continues to contribute to NATO’s KFOR and contributed to its Resolute Support Mission until the alliance’s withdrawal of forces.

In 2020, Lithuania spent 2.13 percent of GDP on defense and 26.2 percent of its defense budget on equipment.⁴⁸⁷ In April 2019, the U.S. and Lithuania signed a five-year “roadmap” defense agreement.⁴⁸⁸ According to the Pentagon, the agreement will help “to strengthen training, exercises, and exchanges” and help Lithuania “to defend against malicious cyber intrusions and attacks.” The two nations also pledged “to support regional integration and procurement of warfighting systems,” including “integrated air and missile defense systems and capabilities to enhance maritime domain awareness.”⁴⁸⁹ A new “Mobilisation and Host Nation Support law” took effect in January 2021.⁴⁹⁰

In November 2020, Lithuania signed a \$213 million deal to purchase four UH-60M Black Hawk helicopters, beginning in late 2024.⁴⁹¹ The U.S. is contributing approximately \$30 million to help in the acquisition.⁴⁹² In October 2020, Lithuania received a Norwegian-made NASAMS mid-range air defense system armed with U.S.-made missiles.⁴⁹³ Lithuania plans to spend an additional \$104 million through 2030 to purchase Javelin anti-tank weapons to supplement the 124 that it already has.⁴⁹⁴ Additional procurements include Boxer Infantry Fighting Vehicles and €145 million for 200 U.S. made Oshkosh Joint Light Tactical Vehicles.⁴⁹⁵

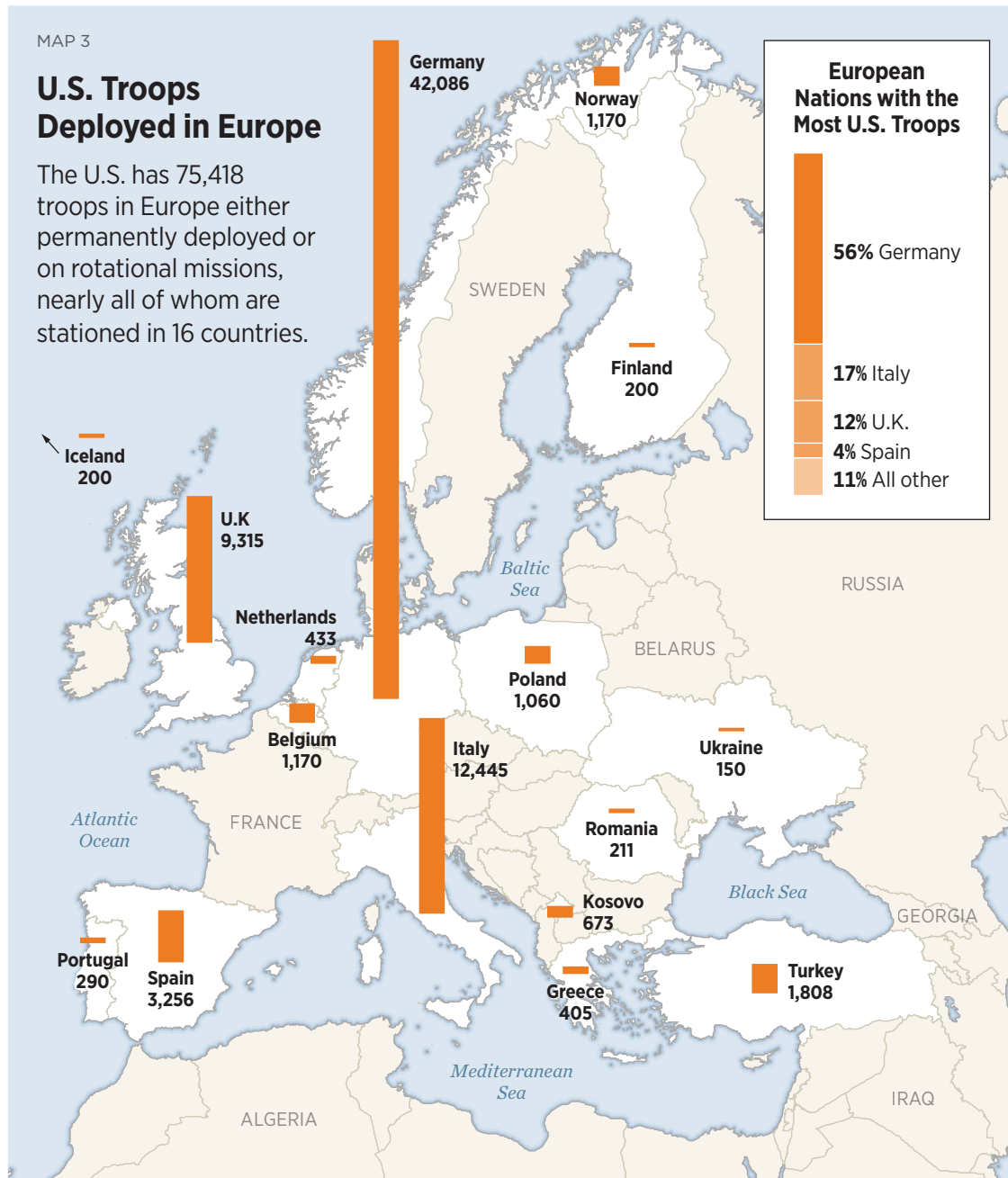
Current U.S. Military Presence in Europe

At its peak in 1953, because of the Soviet threat to Western Europe, the U.S. had approximately 450,000 troops in Europe operating across 1,200 sites. During the early 1990s, both in response to a perceived reduction in the threat from Russia and as part of the so-called

MAP 3

U.S. Troops Deployed in Europe

The U.S. has 75,418 troops in Europe either permanently deployed or on rotational missions, nearly all of whom are stationed in 16 countries.



NOTES:

- **Germany.** Rotational troops as part of Operation Atlantic Resolve are often deployed further forward to Bulgaria, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, and Slovakia.
- **Norway.** About 1,000 rotational troops were deployed from January to April 2021 for cold-weather training, on what is becoming a consistent winter deployment.
- **Kosovo.** Nearly all U.S. forces are part of NATO's Kosovo Force.
- **Romania.** Rotational forces have deployed from permanent bases in Italy.
- **Iceland.** Nearly all of these forces are temporarily deployed from permanent bases in the United Kingdom and taking part in Icelandic Air Policing.

SOURCE: Heritage Foundation research.

heritage.org

peace dividend following the end of the Cold War, U.S. troop numbers in Europe were slashed. Today, fewer than 66,000 active-duty forces are permanently stationed in Europe.⁴⁹⁶

EUCOM's stated mission is to conduct military operations, international military partnering, and interagency partnering to enhance transatlantic security and defend the United States as part of a forward defensive posture. EUCOM is supported by four service component commands (U.S. Naval Forces Europe [NAVEUR]; U.S. Army Europe and Africa [USAREUR-AF]; U.S. Air Forces in Europe [USAFE]; and U.S. Marine Forces Europe [MARFOREUR]) and one subordinate unified command (U.S. Special Operations Command Europe [SOCEUR]).

U.S. Naval Forces Europe. NAVEUR is responsible for providing overall command, operational control, and coordination for maritime assets in the EUCOM and Africa Command (AFRICOM) areas of responsibility. This includes more than 20 million square nautical miles of ocean and more than 67 percent of the Earth's coastline.

This command is currently provided by the U.S. 6th Fleet, based in Naples, and brings critical U.S. maritime combat capability to an important region of the world. Some of the more notable U.S. naval bases in Europe include the Naval Air Station in Sigonella, Italy; the Naval Support Activity Base in Souda Bay, Greece; and the Naval Station at Rota, Spain.

In 2018, the Norfolk, Virginia-based Harry S. Truman Carrier Strike Group (CSG) executed no-notice deployments to the Mediterranean over the summer and the Norwegian Sea above the Arctic Circle in October; the Arctic deployment was the first for a CSG in 30 years.⁴⁹⁷ In February 2020, General Wolters highlighted the importance of CSG deployments: "In the maritime domain, we see predictable Carrier Strike Group and Amphibious presence as key elements of an agile theater posture. The reactivation of U.S. Second Fleet provides necessary maritime command and control capability in the Atlantic, while reinforcing NATO's western flank."⁴⁹⁸

U.S. Army Europe and Africa. In November 2020, U.S. Army Europe and U.S. Army Africa were consolidated into U.S. Army Europe and Africa (USAREUR-AF), headquartered in Wiesbaden, Germany.⁴⁹⁹ According to USAREUR-AF, "The consolidation of these two Army service component commands under one four-star commander will play a vital role in supporting missions across two interconnected theaters of operation" and will "enhance efficiency by streamlining the headquarters' ability to execute functions and improving global and regional contingency response efforts."⁵⁰⁰

The former USAREUR was established in 1952. Then, as today, the U.S. Army formed the bulk of U.S. forces in Europe. USAREUR-AF includes "approximately 73,000 U.S. Army personnel assigned and deployed throughout Europe and Africa."⁵⁰¹ Permanently deployed forces include the 2nd Cavalry Regiment, based in Vilseck, Germany, and the 173rd Airborne Brigade in Italy, with both units supported by the 12th Combat Aviation Brigade out of Ansbach, Germany. In November 2018, the 41st Field Artillery Brigade returned to Europe, with headquarters in Grafenwoehr, Germany. In addition:

Operational and theater enablers such as the 21st Theater Sustainment Command, 10th Army Air and Missile Defense Command, 7th Army Training Command, 79th Theater Sustainment Command, 66th and 207th Military Intelligence Brigades, 2nd Theater Signal Brigade, U.S. Army NATO Brigade, Installation Management Command-Europe and Regional Health Command-Europe provide essential skills and services that support our entire force.⁵⁰²

Reactivated in September 2019, the 1st Battalion, 6th Field Artillery, 41st Field Artillery Brigade is currently the only U.S. rocket artillery brigade in Europe and represents the first time in 13 years that USAREUR has had the Multiple Launch Rocket System in its command.⁵⁰³ A second field artillery battalion

was reactivated in the fall of 2020.⁵⁰⁴ The 5th Battalion, 4th Air Defense Artillery Regiment, was activated in November 2018 and is now based in Ansbach.⁵⁰⁵ The regiment will be the first in the Army to be fully operational with the Maneuver Short Range Air Defense system having already received four of the systems by the end of April 2021 and with more on the way.⁵⁰⁶ The U.S. Army in recent years has reinstituted a number of snap deployments to Europe to hone readiness.⁵⁰⁷ Each year, USAREUR-AF takes part in more than 60 exercises with 80,000 multinational participants from 75 countries.⁵⁰⁸

U.S. Air Forces in Europe. USAFE provides a forward-based air capability that can support a wide range of contingency operations. It originated as the 8th Air Force in 1942 and flew strategic bombing missions over the European continent during World War II. USAFE describes itself as “direct[ing] air operations in a theater spanning three continents, covering more than 19 million square miles, containing 104 independent states, and possessing more than a quarter of the world’s population and more than a quarter of the world’s Gross Domestic Product.”⁵⁰⁹

Headquartered at Ramstein Air Base, USAFE has seven main operating bases along with 114 geographically separated locations. The main operating bases include the RAF bases at Lakenheath and Mildenhall in the U.K., Ramstein and Spangdahlem Air Bases in Germany, Lajes Field in the Azores, Incirlik Air Base in Turkey, and Aviano Air Base in Italy.⁵¹⁰ Terrorist attacks against these installations remain a threat. In March and April 2020, five Tajik nationals who had come to Germany seeking refugee status were arrested for plotting terrorist attacks against U.S. Air Force bases and personnel on behalf of ISIS.⁵¹¹

Strategic bomber deployments continue periodically. In March 2021, U.S. B-1 and B-2 bombers flying from the U.S. deployed out of Orland Air Base in Norway and Lajes Field in Portugal, respectively.⁵¹² According to the U.S. Air Force, “Strategic bomber deployments to Europe provide theater familiarization for

aircrew members and demonstrate U.S. commitment to allies and partners.”⁵¹³

U.S. Marine Forces Europe. MARFOREUR was established in 1980. It was originally a “designate” component command, meaning that it was only a shell during peacetime but could bolster its forces during wartime. Its initial staff was 40 personnel based in London. By 1989, it included more than 180 Marines in 45 separate locations in 19 countries throughout the European theater. Today, the command is based in Boeblingen, Germany, and approximately 300 of the more than 1,500 Marines based in Europe are assigned to MARFOREUR.⁵¹⁴ It was also dual-hatted as Marine Corps Forces, Africa (MARFORAF), under U.S. Africa Command in 2008.

MARFOREUR supports the Norway Air Landed Marine Air Ground Task Force, the Marine Corps’ only land-based prepositioned stock. The Corps has enough prepositioned stock in Norway “to equip a fighting force of 4,600 Marines, led by a colonel, with everything but aircraft and desktop computers,”⁵¹⁵ and the Norwegian government covers half of the costs of the prepositioned storage. The prepositioned stock’s proximity to the Arctic region is particularly important geostrategically. In October 2018, Marines used the prepositioned equipment in NATO’s Trident Juncture 18 exercise, the largest NATO exercise in 16 years, which included 50,000 troops from 31 nations.⁵¹⁶ The prepositioned stocks were to factor heavily into the cancelled Cold Response 2020 exercise.⁵¹⁷

Crucially, MARFOREUR provides the U.S. with rapid reaction capability to protect U.S. embassies in North Africa. The Special-Purpose Marine Air-Ground Task Force–Crisis Response–Africa (SPMAGTF–CR–AF) is “based in Moron, Spain, although it frequently operates from NATO bases throughout the Mediterranean, to include most often Sigonella, Sicily,”⁵¹⁸ and provides a response force of 850 Marines, six MV-22 Ospreys, and three KC-130s.⁵¹⁹ The SPMAGTF helped with embassy evacuations in Libya and South Sudan and conducts regular drills with embassies in the region and exercises with a host of African nations’ militaries.⁵²⁰

U.S. Special Operations Command Europe. SOCEUR is the only subordinate unified command under EUCOM. Its origins are in the Support Operations Command Europe, and it was based initially in Paris. This headquarters provided peacetime planning and operational control of special operations forces during unconventional warfare in EUCOM's area of responsibility.

SOCEUR has been headquartered in Panzer Kaserne near Stuttgart, Germany, since 1967. It also operates out of RAF Mildenhall. In June 2018, U.S. Special Operations Command General Tony Thomas stated that the U.S. plans "to move tactical United States special operations forces from the increasingly crowded and encroached Stuttgart installation of Panzer Kaserne to the more open training grounds of Baumholder" in a move that is expected to take a few years.⁵²¹

Due to the sensitive nature of special operations, publicly available information is scarce. However, it has been documented that SOCEUR elements participated in various capacity-building missions and civilian evacuation operations in Africa, took an active role in the Balkans in the mid-1990s and in combat operations in the Iraq and Afghanistan wars, and most recently supported AFRICOM's Operation Odyssey Dawn in Libya.

SOCEUR also plays an important role in joint training with European allies and since June 2014 has maintained an almost continuous presence in the Baltic States and Poland in order to train special operations forces in those countries. A new special operations base in Latvia that opened in December 2020, for example, "includes a vehicle servicing facility, ammunition storage and two helipads for U.S. CV-22 aircraft from the United Kingdom-based 352nd Special Operations Wing," all of which "are designed to allow special operations forces to move rapidly in and out of the area and conduct maintenance."⁵²²

According to General Tod Wolters, SOF "provide invaluable contributions in sensing the operational environment, enhancing our ability to deter through enhanced indications and warnings."⁵²³ The FY 2021 DOD EDI

budget request included over \$40 million in declared special operations funding for various programs including intelligence enhancements, staging and prepositioning, and exercises with allies.⁵²⁴

Key Infrastructure and Warfighting Capabilities

One of the major advantages of having U.S. forces in Europe is access to logistical infrastructure. For example, EUCOM supports the U.S. Transportation Command (TRANSCOM) with its array of air bases and access to ports throughout Europe. One of these bases, Mihail Kogalniceanu Air Base in Romania, is a major logistics and supply hub for U.S. equipment and personnel traveling to the Middle East region.⁵²⁵

Europe is a mature and advanced operating environment. Because of its decades-long presence in Europe, the U.S. benefits from tried and tested systems that involve moving large numbers of matériel and personnel into, within, and out of the continent. This offers an operating environment that is second to none in terms of logistical capability. There are more than 166,000 miles of rail line in Europe (not including Russia), an estimated 90 percent of roads in Europe are paved, and the U.S. enjoys access to a wide array of airfields and ports across the continent.

Conclusion

Overall, the European region remains a stable, mature, and friendly operating environment. Russia remains the preeminent military threat, both conventionally and unconventionally, but Chinese propaganda, influence operations, and investments in key sectors present a new threat that needs to be addressed. NATO and many European countries apart from those in the alliance have taken increased interest in the behavior and ambitions of both countries, although an agreed upon, collective way to address these challenges remains elusive.

America's closest and oldest allies are located in Europe, and the region is incredibly

important to the U.S. for economic, military, and political reasons. Perhaps most important, the U.S. has treaty obligations through NATO to defend the European members of that alliance. If the U.S. needs to act in the European region or nearby, there is a history of interoperability with allies and access to key logistical infrastructure that makes the operating environment in Europe more favorable than the environment in other regions in which U.S. forces might have to operate.

The past year saw continued U.S. reengagement with the continent, both militarily and politically, along with continued increases in European allies' defense budgets and capability investments. The U.S. has increased its investment in Europe, and its military position on the continent is stronger than it has been for some time.

The economic, political, and societal impacts of the COVID-19 pandemic are only

beginning to be felt and will undoubtedly have to be reckoned with for years to come, particularly with respect to Europe's relationship with China. NATO utilized a host of resources to assist with the response to COVID-19 while continuing to ensure that the pandemic did not enervate the alliance's collective defense.

NATO's renewed focus on collective defense has resulted in a focus on logistics, newly established commands that reflect a changed geopolitical reality, and a robust set of exercises. NATO's biggest challenges derive from capability and readiness gaps for many European nations, continuing improvements and exercises in the realm of logistics, a tempestuous Turkey, disparate threat perceptions within the alliance, and the need to establish the ability to mount a robust response to both linear and nonlinear forms of aggression.

Scoring the European Operating Environment

As noted at the beginning of this section, various considerations must be taken into account in assessing the regions within which the U.S. may have to conduct military operations to defend its vital national interests. Our assessment of the operating environment utilized a five-point scale, ranging from "very poor" to "excellent" conditions and covering four regional characteristics of greatest relevance to the conduct of military operations:

- 1. Very Poor.** Significant hurdles exist for military operations. Physical infrastructure is insufficient or nonexistent, and the region is politically unstable. The U.S. military is poorly placed or absent, and alliances are nonexistent or diffuse.
- 2. Unfavorable.** A challenging operating environment for military operations is marked by inadequate infrastructure, weak alliances, and recurring political
- 3. Moderate.** A neutral to moderately favorable operating environment is characterized by adequate infrastructure, a moderate alliance structure, and acceptable levels of regional political stability. The U.S. military is adequately placed.
- 4. Favorable.** A favorable operating environment includes good infrastructure, strong alliances, and a stable political environment. The U.S. military is well placed in the region for future operations.
- 5. Excellent.** An extremely favorable operating environment includes well-established and well-maintained infrastructure; strong, capable allies; and a stable political environment. The U.S. military is exceptionally well placed to defend U.S. interests.

The key regional characteristics consist of:

- a. **Alliances.** Alliances are important for interoperability and collective defense, as allies are more likely to lend support to U.S. military operations. Various indicators provide insight into the strength or health of an alliance. These include whether the U.S. trains regularly with countries in the region, has good interoperability with the forces of an ally, and shares intelligence with nations in the region.
- b. **Political Stability.** Political stability brings predictability for military planners when considering such things as transit, basing, and overflight rights for U.S. military operations. The overall degree of political stability indicates whether U.S. military actions would be hindered or enabled and considers such questions as whether transfers of power are generally peaceful and whether there have been any recent instances of political instability in the region.
- c. **U.S. Military Positioning.** Having military forces based or equipment and supplies staged in a region greatly enhances the ability of the United States to respond to crises and, presumably, achieve successes in critical “first battles” more quickly. Being routinely present in a region also helps the U.S. to maintain

familiarity with its characteristics and the various actors that might try to assist or thwart U.S. actions. With this in mind, we assessed whether or not the U.S. military was well positioned in the region. Again, indicators included bases, troop presence, prepositioned equipment, and recent examples of military operations (including training and humanitarian) launched from the region.

- d. **Infrastructure.** Modern, reliable, and suitable infrastructure is essential to military operations. Airfields, ports, rail lines, canals, and paved roads enable the U.S. to stage, launch operations from, and logistically sustain combat operations. We combined expert knowledge of regions with publicly available information on critical infrastructure to arrive at our overall assessment of this metric.

For Europe, scores this year remained steady, with no substantial changes in any individual categories or average scores:

- Alliances: **4—Favorable**
- Political Stability: **4—Favorable**
- U.S. Military Positioning: **4—Favorable**
- Infrastructure: **4—Favorable**

Leading to a regional score of: **Favorable**

Operating Environment: Europe

	VERY POOR	UNFAVORABLE	MODERATE	FAVORABLE	EXCELLENT
Alliances				✓	
Political Stability				✓	
U.S. Military Posture				✓	
Infrastructure				✓	
OVERALL				✓	

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