

U.S. Army

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The U.S. Army is America's primary agent for the conduct of land warfare. Although it is capable of all types of operations across the range of military operations and support to civil authorities, its chief value to the nation is its ability to defeat and destroy enemy land forces in battle.

The Army is engaged throughout the world in protecting and advancing U.S. interests. From May 2021 to April 2022, the Army provided 120,000 soldiers to the Joint Force in 140 different countries.¹ Most notably it has deployed significant forces to NATO countries as a deterrent to further aggression by Russia. Since Vladimir Putin began his invasion of Ukraine on February 24, 2022, the Army has deployed two Corps, two Division Headquarters, six Brigade Combat Teams, and two Combat Aviation Brigades to Europe.

On May 12, 2022, speaking of the deployments to Europe, Secretary of the Army Christine Wormuth and Army Chief of Staff General James C. McConville testified that:

Never before has the U.S. Army moved so many forces so quickly. It took less than one week after receiving deployment orders for an armored brigade to deploy from Savannah, Georgia and be on the ground in Germany starting live-fire exercises with tanks drawn from [Army Prepositioned Stock] in Europe. That is a testament to years spent investing in our alliances and partnerships, and to maintaining strong relationships that enabled the Army [to enjoy] the access and presence needed to bolster NATO deterrence.²

The Army, like the other military services, finds itself under extraordinary operational and financial

pressure. In some cases, advances in firepower like ballistic missiles, electronic warfare, and loitering munitions delivered by drones fielded by adversaries like China have outpaced the U.S. Army's capabilities. Information-age warfare requires new levels of speed and precision in Army sensor-to-shooter chains. Autonomy is changing the character of warfare, and the Army has developed some bold ideas about how to take advantage of this technology.

In her initial message to the Army, Secretary Wormuth set out six objectives. The first, and arguably most important is to "put the Army on a sustainable strategic path amidst this uncertainty." Wormuth acknowledged that the Army is "facing increased fiscal pressures" And while the objective of "a sustainable strategic path" is noble and well-founded, it is not at all clear how the Army will be able to find such a path given its significant year-over-year losses in buying power.³

When inflation is factored in, the Army has lost \$46 billion in buying power since fiscal year (FY) 2019, and if we assume an inflation factor of 5 percent from 2022 to 2023 (which is likely conservative), the Administration's \$177.5 billion FY 2023 budget request for the Army represents a loss of more than \$6 billion just from its FY 2022 enacted budget.⁴ Signs of budget strain are clearly visible in the Army's proposal to cut its end strength; in modernization accounts slashed (with procurement cut by 7 percent and research and development down by 6 percent); and in military construction accounts that are now below historic levels.⁵

Enduring Relevance of Land Power. Arguments that America no longer needs a strong modern Army because, for example, China is largely a maritime threat ignore history. We need to look no further than today's newspaper headlines about war

in Europe between Russia and Ukraine to remember that capable land power is an enduring need for the United States.

America has a horrible record of predicting where it will fight its next war. As former Secretary of Defense Robert Gates famously said:

When it comes to predicting the nature and location of our next military engagements, since Vietnam, our record has been perfect. We have never once gotten it right, from the Mayaguez to Grenada, Panama, Somalia, the Balkans, Haiti, Kuwait, Iraq, and more—we had no idea a year before any of these missions that we would be so engaged.⁶

America should not be willing to gamble that the next conflict will be in the Indo-Pacific and put all our eggs in one basket and ignore the need for land power.

Many also overlook the fact that great-power competition with China and Russia is a global contest, which means that we face the enduring need to counter aggression wherever it may occur, not just within the territory or waters of China or Russia. All of this reinforces the reality that America has a long-term need for modernized, sufficiently sized land power.

Lingering Effects of the Pandemic. The Army has largely surmounted the direct challenges posed by the COVID-19 pandemic, but some others have been more persistent. Major collective training events had to be cancelled, and the virus upended Army recruiting efforts in FY 2021, but the Army eventually achieved its desired overall end strength, albeit by relying more on reenlistments than on recruiting.⁷ In 2022, combined with other structural factors, the reordering of the U.S. economy that was caused by the pandemic continues to frustrate recruiting efforts.

An Army Recruiting Crisis. The Army's FY 2023 budget request reflects a reduction of 12,000 in end strength.⁸ The Army has endeavored to portray this cut as both temporary and driven by a desire to maintain a quality force. In reality, the Army and, to a degree, the other military services are facing a recruiting crisis the likes of which they have not experienced since the transition to the All-Volunteer Force in 1973.⁹ Since 2018, the Army has been missing its recruiting goals and making up the difference with strong numbers of reenlistments. Now

facing extraordinary financial pressure and in order to save money, it has been forced to face reality and cut spaces for servicemembers that it does not anticipate being able to recruit.

The reasons for the recruiting crisis are many.

- The percentage of Americans that qualify for military service without a waiver has dropped from 29 percent in 2016 to 23 percent in 2022.
- The predominant factor in disqualification is obesity.
- Low unemployment makes recruiting difficult, and as this book was being prepared, the U.S. unemployment rate “was 3.6 percent for the third month in a row.”¹⁰
- A requirement for volunteers to be vaccinated against COVID-19 is disqualifying some applicants.
- Finally, for a variety of reasons that are beyond the scope of this study, fewer Americans express a desire to serve in the armed forces.¹¹

The results of this recruiting crisis include lower manning in Army formations, critical shortages in certain career fields, and lower overall readiness. If the crisis is not ameliorated, its longer-term implications are even more consequential.

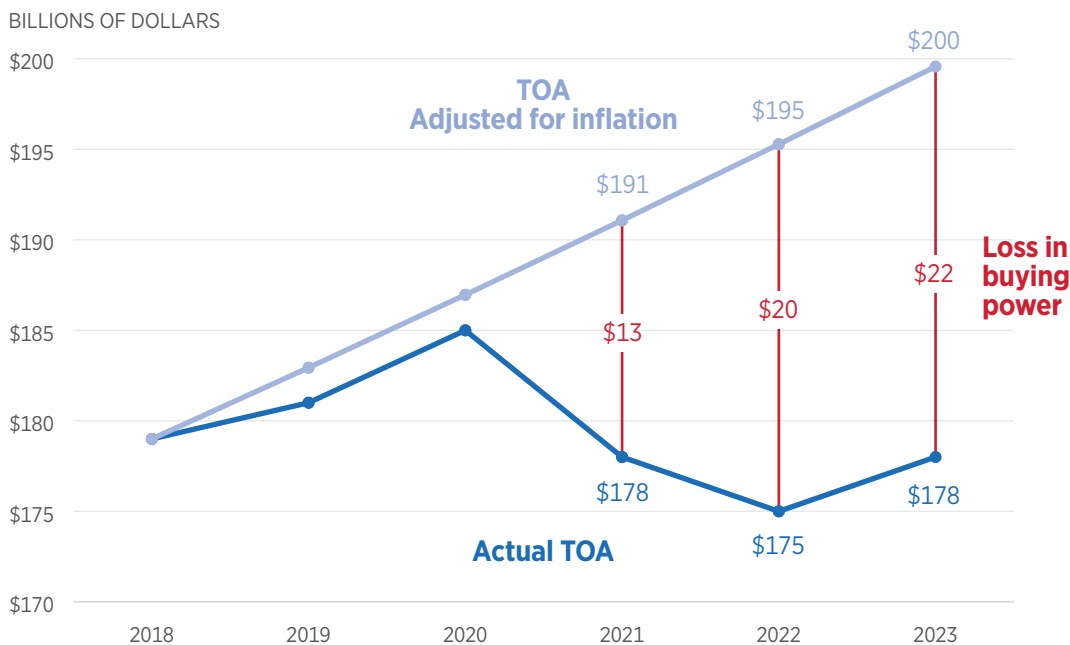
A Capable Force Showing Strain of Chronic Underfunding. The U.S. Army is currently the world's most powerful army, but it is also too small and insufficiently modern to meet even the modest requirements of the 2018 National Defense Strategy (NDS),¹² much less to handle two major regional contingencies simultaneously, which many experts believe is essential.¹³

Even though the conflict in Iraq has largely ended and the military has withdrawn from Afghanistan, the Army's single-minded focus on counterinsurgency during the period from 2001 to 2016 precluded the service from modernizing the key combat capabilities that it needs now for near-peer competition. In 2011, for example, the Army cancelled its only mid-tier air defense program, the Surface Launched Advanced Medium-Range Air-to-Air Missile (SLAMRAAM), based on its assessment that it would not face a threat from the air in the

CHART 5

Army Budget Hit by Both Cuts and Inflation

Not only is the Army's total obligation authority (TOA) declining in real terms, but due to inflation, those declines have resulted in an additional loss of buying power since 2018. Combined losses from 2018 to 2023 total \$59 billion.



SOURCES: Honorable Gabe Camarillo, Under Secretary of the Army, “Army Fiscal Year 2023 Budget Overview,” March 28, 2022, p. 5, <https://www.asafm.army.mil/Portals/72/Documents/BudgetMaterial/2023/pbr/Army%20FY%202023%20Budget%20Overview.pdf> (accessed August 17, 2022), and Executive Office of the President, Office of Management and Budget, *Budget of the U.S. Government, Fiscal Year 2023*, https://www.whitehouse.gov/wp-content/uploads/2022/03/budget_fy2023.pdf (accessed August 17, 2022).

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foreseeable future.¹⁴ The Army's last major modernization efforts occurred in the 1980s with the fielding of the M-1 Abrams Tank, the M-2 Bradley Fighting Vehicle, and the Blackhawk and Apache helicopters. As General McConville has cogently argued, “we must modernize the Army. Every 40 years the Army needs to transform. It did in 1940, it did in 1980 and we're in 2020 right now.”¹⁵

The Army's ability to transition from counterinsurgency operations was further constrained by a period of fiscal austerity that began with the Budget Control Act (BCA) of 2011.¹⁶ The inability to fund what was needed led to difficult across-the-board tradeoffs in equipment, manpower, and operations accounts. Budget pressure drove the Department

of Defense (DOD) in 2014 to consider cutting the Army's Active component end strength from more than 500,000 to 420,000. If implemented, this would have resulted in “the smallest number of troops since before the Second World War.”¹⁷ Multiple equipment programs were cancelled.

The change in Administrations in 2017 forestalled those cuts in end strength. However, the addition of billions of dollars by Congress and the Trump Administration, while it served to arrest the decline of the Army and significantly improved unit readiness, was not sufficient to modernize or significantly increase the size of the force.¹⁸

A Change in Strategic Direction? As of May 2022, the Biden Administration had been in office for 16

months, yet it remains unclear what direction its National Security or National Defense strategies will take. The Administration's Interim National Security Guidance provided little insight into its thinking with respect to national defense and does not mention the Army or any other military service.¹⁹ The Administration has released a one-and-a-half-page fact sheet on its National Defense Strategy, but it provides no useful details.²⁰

Consequences of the Loss in Buying Power.

Despite relatively broad agreement that the DOD budget needed real growth of 3 percent to 5 percent to avoid a strategy–budget mismatch,²¹ the defense budget topline did not meet that target in FY 2019 and has not done so since.

Of all the services, the Army has fared the worst in terms of resources. Its funding levels plateaued with the FY 2020 budget and since then have declined. The Army received \$181 billion in FY 2019, \$185 billion in FY 2020, \$178 billion in FY 2021, and \$175 billion in FY 2022 and has requested \$178 billion for FY 2023.²² Because of the inexorable annual bite of inflation and the decline in budget authority, the Army budget for FY 2023 represents a net loss of about 11 percent in buying power, or \$46 billion, since FY 2019.

Summarizing the Army budget at a recent hearing, General McConville candidly reported: “You know Congressman, we’re trying to give you the best army we can with the resources we get.”²³ General McConville’s more than \$5 billion Unfunded Priority List containing hundreds of critical items is a testament to what the Army was not able to include in its FY 2023 budget request: family housing, cold weather clothing, Stinger missiles, counter unmanned aerial vehicle systems, and air defense systems—among many other categories of funding.²⁴

Capacity

Capacity refers to the sufficiency of forces and equipment needed to execute the National Defense Strategy. One of the ways the Army quantifies its warfighting capacity is by numbers of Brigade Combat Teams (BCTs).

Brigade Combat Teams. BCTs are the Army’s primary combined arms, close combat force. They often operate as part of a division or joint task force, both of which are the basic building blocks for employment of Army combat forces. BCTs are usually employed within a larger framework of U.S. land

operations but are equipped and organized so that they can conduct limited independent operations as circumstances demand.²⁵

BCTs range between 4,000 and 4,700 soldiers in size. There are three types of BCTs: Infantry, Armored, and Stryker. At its core, each of these formations has three maneuver battalions enabled by multiple other units such as artillery, engineers, reconnaissance, logistics, and signal units.²⁶

The simplest way to understand the status of hard Army combat power is to know the readiness, quantity, and modernization level of BCTs. This section deals with the number of BCTs in the force.

Since 2012, the number of active BCTs has been in decline. In January 2012, “DOD announced [that] the Army would reduce the size of the Active Army starting in 2012 from a post-9/11 peak in 2010 of about 570,000 soldiers to 490,000 soldiers by the end of 2017.” Later guidance revised that figure downward “to a range of 440–450,000 soldiers.”²⁷ In 2013, the Army announced that because of those end strength reductions and the priorities of the prior Administration, the number of Regular Army BCTs would be reduced from 45 to 33.²⁸ Subsequent reductions reduced the number of Regular Army BCTs from 33 to 31, where they remain today.²⁹

When President Donald Trump and Congress reversed the planned drawdown in Army end strength and authorized growth beginning in 2017, instead of “re-growing” the numbers of BCTs, the Army chose to “thicken” the force and raise the manning levels within the individual BCTs to increase unit readiness. The Army’s goal was to fill operational units to 105 percent of their authorized manning,³⁰ but the decision announced in the FY 2023 budget to cut end strength by 12,000 soldiers will reverse those trends.

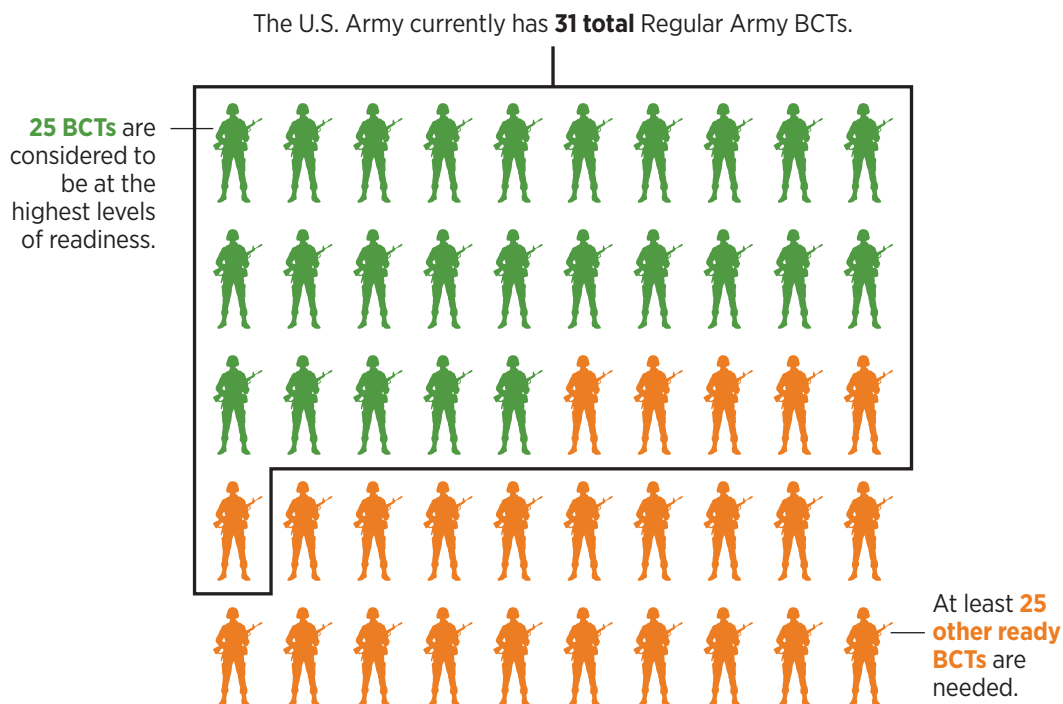
Combat Aviation Brigades. The Regular Army also has a separate air component that is organized into Combat Aviation Brigades (CABs). CABs are made up of Army rotorcraft, such as the AH-64 Apache, and perform various roles including attack, reconnaissance, and assault. The number of Army aviation units also has been reduced. In May 2015, the Army deactivated one of its 12 CABs, leaving only 11 in the Regular Army.³¹

Generating Force. CABs and Stryker, Infantry, and Armored BCTs make up the Army’s main combat fighting forces, but they obviously do not make up the entirety of the Army. In the Active

FIGURE 1

Army Capacity: Brigade Combat Teams

Based on historical force requirements, The Heritage Foundation assesses that the Army needs a total of 50 Brigade Combat Teams (BCTs).



* Includes four Army National Guard BCTs.

SOURCE: Email to the author from Headquarters, Department of the Army, Public Affairs office, July 6, 2022.

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component, there are 194,000 soldiers in combat units, 119,000 in support units, and 138,000 in overhead units. Overhead is composed of administrative units and units providing such types of support as preparing and training troops for deployments, carrying out key logistics tasks, staffing headquarters, and overseeing military schools and Army educational institutions.

Functional or Multifunctional Support Brigades. In addition to the institutional Army, a great number of functional or multifunctional support brigades, amounting to approximately 46 percent of the force,³² provide air defense; engineering; explosive ordnance disposal; chemical, biological, radiological, and nuclear protection; military police; military intelligence; and medical support among

other types of battlefield support. Special operations forces such as the 75th Ranger Regiment, six Special Forces Groups, and the 160th Special Operations Aviation Regiment are also included in these numbers.

New Concepts and Supporting Force Structure. The Army is trying to adapt its force structure to meet the anticipated new demands of near-peer competition. The foundations for these changes are contained in the Army's Multi-Domain Operations (MDO) concept, published in December 2018, which describes how the Army views the future.³³

In January 2022, the Army announced that it planned to modify its force structure for MDO under the designation "Army 2030." As part of this initiative, the Army plans to reorganize divisions

TABLE 4

Major Army Combat Formations

Brigade Combat Teams	Regular Army	Army National Guard	Total
Infantry Brigade Combat Teams	13	20	33
Stryker Brigade Combat Teams	7	2	9
Armored Brigade Combat Teams	11	5	16
Total	31	27	58

Aviation Brigades	Regular Army	Army National Guard	Total
Combat Aviation Brigades	11	–	11
Expeditionary Combat Aviation Brigades	–	8	8
Theater Aviation Brigades	–	2	2
Total	11	10	21

SOURCES:

- U.S. Department of the Army, *Department of the Army Fiscal Year (FY) 2023 Budget Estimates, Volume 1, Operation and Maintenance, Army, Justification of Estimates*, April 2022, pp. 57 and 121, https://www.asafm.army.mil/Portals/72/Documents/BudgetMaterial/2023/Base%20Budget/Operation%20and%20Maintenance/OMA_Volume_1.pdf (accessed August 17, 2022).
- U.S. Department of the Army, *Department of the Army Fiscal Year (FY) 2023 Budget Estimates, Volume 1, Operation and Maintenance, Army National Guard, Justification Book*, April 2022, pp. 38 and 94, https://www.asafm.army.mil/Portals/72/Documents/BudgetMaterial/2023/Base%20Budget/Operation%20and%20Maintenance/OMNG_Vol_1.pdf (accessed August 17, 2022).

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into five different types: Standard Light, Standard Heavy, Penetration, Joint Force Entry Air Assault, and Joint Force Entry Airborne.³⁴ Very little information has been made public regarding the missions, the organization of these divisions, and the timeline for conversions. As part of its adaptation to MDO, the Army reactivated V Corps Headquarters on October 16, 2020, to provide operational planning, mission command, and oversight of rotational forces in Europe.³⁵

The Army also has announced plans to create five Multi-Domain Task Forces (MDTFs). One MDTF is currently stationed at Joint Base Lewis–McChord in Washington State. Another is in Wiesbaden Germany, aligned to Europe. These task forces contain rockets, missiles, military intelligence, and other capabilities that will allow Army forces to operate seamlessly with joint partners and conduct

multi-domain operations.³⁶ A third MDTF included in the Army’s FY 2023 budget will be “tied” to the Indo-Pacific with exact stationing still to be determined.³⁷

To relieve the stress on the use of BCTs for advisory missions, the Army has activated six Security Force Assistance Brigades (SFABs). These units, each one of which is composed of about 800 soldiers, are designed specifically to train, advise, and mentor other partner-nation military units. The Army had been using BCTs for this mission, but because train-and-assist missions typically require senior officers and noncommissioned officers, a BCT comprised predominantly of junior soldiers was a poor fit. The SFABs will be regionally aligned to combatant commands. Of the six SFABs, one is in the National Guard, and the other five are in the Regular Army.³⁸

Force Too Small to Execute the NDS. Army leaders have consistently stated that the Army is too small to execute the National Defense Strategy at less than significant risk. For FY 2022, the Army had an authorized total end strength of 1,010,500 soldiers:

- 485,000 in the Regular Army,
- 189,500 in the Army Reserve, and
- 336,000 in the Army National Guard (ARNG).³⁹

In May 2021, Army Chief of Staff McConville testified that “[w]hen we take a look at end-strength, I would like to grow the Army. We’ve done analysis like the previous chief [General Mark Milley] talked about. 540 to 550 [thousand] is about the right size of the Army.”⁴⁰ In an earlier discussion with reporters, McConville stated, “I would have a bigger...sized Army if I thought we could afford it, I think we need it, I really do.... I think the regular Army should be somewhere around 540–550 [thousand].... [W]e’re sitting right now at 485,000.”⁴¹

The Army’s plan to increase the size of the Regular Army force has recently been slammed into reverse because of budget cuts and recruiting challenges. The Army had planned to raise the Regular Army incrementally to above 500,000 by adding approximately 2,000 soldiers per year.⁴² At that rate, it would have reached 500,000 by around 2028. Now even that modest plan is off the table. As a result of bleak defense budget forecasts and recruiting difficulties, the Army has proposed to cut its active end strength by 12,000 in FY 2023.⁴³

Overall end strength dictates how many BCTs the Army can form, and by cutting end strength, not only will the service not be able to add more combat units, but it will likely have to reduce the manning levels in the units it possesses. This will drive a higher operational tempo (OPTEMPO) for Army units and increase risk both for the force and for the ability of the Army to carry out its mission.

Many outside experts agree that the U.S. Army is too small. In 2017, Congress established the National Defense Strategy Commission to provide an “independent, non-partisan review of the 2018 National Defense Strategy.” Two of the commissioners, Dr. Kathleen Hicks and Mr. Michael McCord, are now top DOD leaders. Among its findings, the

commission unanimously reported that the NDS now charges the military with facing “five credible challengers, including two major-power competitors, and three distinctly different geographic and operational environments.” The commission assessed that “[t]his being the case, a two-war force sizing construct makes more strategic sense today than at any previous point in the post-Cold War era.” In other words, “[s]imply put, the United States needs a larger force than it has today if it is to meet the objectives of the strategy.”⁴⁴

In addition to the increased strategic risk of not being able to execute the NDS within the desired time frame, the combination of an insufficient number of BCTs and a lower-than-required Army end strength has resulted in a higher-than-desired level of OPTEMPO. Assistant Deputy Chief of Staff, G-3/5/7, Major General Sean Swindell recently stated that the Army had tried to reduce the demands on the force, but that “effort has been going in the opposite direction.”⁴⁵

Army Force Posture. The Army also has transitioned from a force with a third of its strength typically stationed overseas, as it was during the Cold War, to a force that is mostly based in the continental United States. In 1985, 31 percent of the active-duty Army was stationed overseas; by 2015, that figure had declined to 9 percent.⁴⁶ The desire to find a peace dividend following the dissolution of the Soviet Union, combined with a reluctance to close bases in the United States, led to large-scale base closures and force reductions overseas. Even though the 2018 NDS (the most recently publicly available defense strategy) placed a high premium on how the Joint Force is postured, achieving that goal will be very difficult with the vast bulk of the Army now in the United States.

Among Army units that deploy periodically are Armored Brigade Combat Teams (ABCTs) and Patriot Battalions that rotate to and from Europe, Kuwait, and Korea. Rather than relying on forward-stationed BCTs, the Army rotates ABCTs to these regions on a “heel-to-toe” basis so that there is never a gap.

The Russia–Ukraine War has brought the issue of stationing more Army forces in Europe back to the forefront. Joint Chiefs of Staff Chairman General Mark Milley has suggested that the U.S. should establish more permanent European bases and rotate more forces to the continent.⁴⁷ There is disagreement as to which represents the better

option: rotated forces or forward-stationed forces. Proponents of rotational BCTs argue that they arrive fully trained, that they remain at a high state of readiness throughout their typically nine-month overseas rotation, and that the cost of providing for accompanying military families is avoided. Those who favor forward-stationed forces point to a lower overall cost, forces that typically are more familiar with the operating environment, and a more reassuring presence for our allies.⁴⁸ In reality, both types of force postures are needed, not only for the reasons mentioned, but also because the mechanisms by which a unit is deployed, received into theater, and integrated with the force stationed abroad must be practiced on a regular basis.

Capability

Capability in this context refers to the quality, performance, suitability, and age of the Army's various types of combat equipment. In general, the Army is using equipment developed in the 1970s, fielded in the 1980s, and incrementally upgraded since then. This "modernization gap" was caused by several factors: the predominant focus on the wars in Iraq and Afghanistan since 9/11; pressures caused by budget cuts, especially those associated with the BCA; and failures in major modernization programs like the Future Combat System, Ground Combat Vehicle, and Crusader artillery system.

Army leaders today clearly view this situation as a serious challenge. General McConville believes that modernization cannot be deferred any longer:

[E]veryone believes, and I believe strongly-- that we must transform and modernize the Army now. So we've got to do that. We're three years into it, I think we've got some really good programs going. We probably need about two or three more years of good solid budgets. And I think that's something we have to do.⁴⁹

Emphasizing the point, McConville also said recently that "we must transform the Army, now. Every 40 years, I would argue or suggest the Army transforms. It did it in 1940, it did it when I came in, in the Army in 1980. Now, we're in 2020, and we must transform the Army."⁵⁰

Equipment Losing Its Competitive Advantage. As an example of how Army equipment is falling behind that of our competitors, the Army

Tactical Missile System (ATACMS), first introduced in 1991, is the Army's only ground-launched precision missile. Because of the Intermediate Range Nuclear Forces Treaty's restrictions and other factors, it had a maximum range of 300 kilometers. China and Russia have much more substantial inventories of conventional, precision, ground-launched missiles and rockets. China has nine major ground-launched missile systems and more than 425 launchers. These capable systems can range from 600 kilometers (DF-11A and DF-15) to 4,000 kilometers (DF-26).⁵¹ Russia, on the other hand, has the widest inventory of missiles in the world: at least four conventional ground-launched missile systems that can range from 120 kilometers (SS-21) to 2,500 kilometers (SSC-8).⁵² The Army plans to field a new precision strike missile by 2023, but for now, that system remains a plan rather than a capability.⁵³

Another example is the main battle tank. When the M-1 Abrams was introduced in 1980, it was indisputably the world's best tank. Now, in 2022, before the war with Ukraine, Russia was reportedly going to export versions of its T-14 Armata tank, which has an unmanned turret, reinforced frontal armor, an information management system that controls all elements of the tank, a circular Doppler radar, an option for a 155 mm gun, and 360-degree ultraviolet high-definition cameras.⁵⁴ Other assessments rate two other tanks—the German Leopard 2A7 and the South Korean K2 Black Panther—as superior to the M-1A2 SEP v3.⁵⁵ The M-1A2 SEP v3 (the latest version) is a very good tank, but the decisive advantage the U.S. once enjoyed in tank warfare has now disappeared.

Similarly, the U.S. Army's Patriot Missile System is an excellent system, but countries such as Saudi Arabia, Turkey, and India have either purchased or recently expressed interest in buying the Russian competitor system, the S-400.⁵⁶ The question has to be asked: Why?

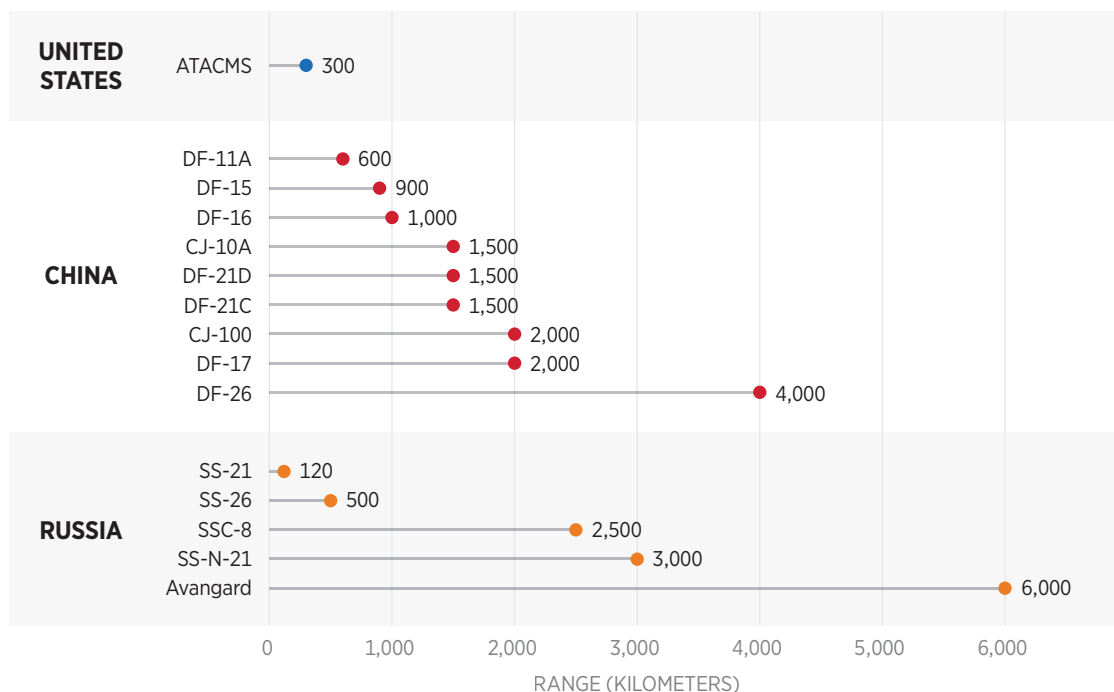
Within the Army's inventory of equipment are thousands of combat systems, including small arms, trucks, aircraft, soldier-carried weapons, radios, tracked vehicles, artillery systems, missiles, and drones. The following updates with respect to some of the major systems as they pertain to Armored, Stryker, and Infantry BCTs and Combat Aviation Brigades are by no means exhaustive.

Armored Brigade Combat Team (ABCT). The Armored BCT's role is to "close with the enemy by

CHART 6

U.S. Lags Behind China, Russia in Land-Based Missiles

GROUND-LAUNCHED CONVENTIONAL-CAPABLE PRECISION MISSILE SYSTEMS



SOURCES:

- China Power Team, "How Are China's Land-based Conventional Missile Forces Evolving?" Center for Strategic and International Studies, China Power Project, updated May 12, 2021, <https://chinapower.csis.org/conventional-missiles/> (accessed August 17, 2022).
- Center for Strategic and International Studies, Missile Defense Project, "Missiles of Russia," *Missile Threat*, last updated August 10, 2021, <https://missilethreat.csis.org/country/russia/> (accessed August 17, 2022).
- U.S. Army, Acquisition Support Center, "Army Tactical Missile System (ATACMS)," <https://asc.army.mil/web/portfolio-item/atacms/> (accessed August 17, 2022).

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means of fire and movement to destroy or capture enemy forces, or to repel enemy attacks by fire, close combat, and counterattack to control land areas, including populations and resources.⁵⁷ The Abrams Main Battle Tank (most recent version in production: M1A2 SEPv3, "scheduled for First Unit Equipped in FY 2020"⁵⁸) and Bradley Fighting Vehicle (most recent version: M2A4, first unit equipped in April 2022⁵⁹) are the primary Armored BCT combat platforms.

The M-1 tank and Bradley Fighting Vehicle first entered service in 1980 and 1981, respectively. There are 87 M-1 Abrams tanks and 152 Bradley Fighting

Vehicle variants in an ABCT.⁶⁰ Despite upgrades, the M-1 tank and the Bradley are now at least 40 years old, and their replacements will likely not arrive until the platforms are at least 50 years old.

Optionally Manned Fighting Vehicle (OMFV).

The Army's replacement program for the Bradley, the Optionally Manned Fighting Vehicle, was on an aggressive timeline, but the Army cancelled the request for proposals in January 2020 and rereleased an RFP for what it called a "concept design" in December 2020. Five teams were selected to come up with designs for the OMFV. The next milestone was in July 2022 when the government released a final

RFP. An award for three contractors to produce detailed designs is expected in the second quarter of FY 2023,⁶¹ and “[t]he Army now plans for the first unit to be equipped [with the OMFV] in the fourth quarter of FY2028.”⁶² Flat or declining funding such as the Army is currently experiencing may impact those plans.

New Tank? A potential clean-sheet replacement for the M-1 tank is even further down the road. The Army does not intend to decide “what direction we want to go for decisive lethality and survivability on the battlefield” until at least 2023.⁶³ Meanwhile, the Army has another upgrade in development for the Abrams platform: the M1A2 SEPv4, which would incorporate a third-generation Forward-Looking Infrared (FLIR) sensor.⁶⁴

Armored Multi-Purpose Vehicle (AMPV). The venerable M113 multi-purpose personnel carrier is also part of an ABCT and fills multiple roles such as mortar carrier and ambulance. It entered service in 1960 and is scheduled to be replaced by the new Armored Multi-Purpose Vehicle (AMPV), which after numerous delays “entered the low-rate initial production phase (LRIP)” on January 25, 2019.⁶⁵ The system’s first fieldings are now expected during the second quarter of FY 2023.⁶⁶ The Army’s FY 2023 budget requested to procure 72 AMPVs. At that rate, it will take the Army 40 years to meet its objective of 2,897 AMPVs.⁶⁷

Stryker Brigade Combat Team (SBCT). The Stryker BCT “is an expeditionary combined arms force organized around mounted infantry” and is able to “operate effectively in most terrain and weather conditions” because of its rapid strategic deployment and mobility.⁶⁸ Stryker BCTs are equipped with approximately 321 eight-wheeled Stryker vehicles.⁶⁹ Relatively speaking, these vehicles are among the Army’s newest combat platforms, having entered service in 2001. In response to an Operational Needs Statement, the Stryker BCT in Europe received Strykers fitted with a 30 mm cannon to provide an improved anti-armor capability.⁷⁰ Based on the success of that effort, the Army decided to outfit at least three of its SBCTs equipped with the Double V-hull, which affords better underbody protection against such threats as improvised explosive devices (IEDs), with the 30 mm autocannon.⁷¹ The next SBCT to receive the cannons (after the 2nd Cavalry Regiment) will be the 1-2 SBCT at Joint Base Lewis–McChord in Washington State.⁷² The Army is also integrating

Javelin anti-tank missiles on the Stryker platform and test-fired this capability in April 2022.⁷³

Infantry Brigade Combat Team (IBCT). The Infantry BCT “is an expeditionary, combined arms formation optimized for dismounted operations in *complex terrain*—a geographical area consisting of an urban center larger than a village and/or of two or more types of restrictive terrain or environmental conditions occupying the same space.”⁷⁴ Infantry BCTs have fewer vehicles and rely on lighter platforms such as trucks, High Mobility Multipurpose Wheeled Vehicles (HMMWVs), and Joint Light Tactical Vehicles (JLTVs) for mobility.

Joint Light Tactical Vehicle (JLTV). The JLTV combines the protection offered by Mine Resistant Ambush Protected Vehicles (MRAPs) with the mobility of the original unarmored HMMWV. The vehicle features design improvements that increase its survivability against anti-armor weapons and IEDs. The Army Procurement Objective is 49,099, replacing about 50 percent of the current HMMWV fleet.

Requested FY 2023 funding of \$703.1 million would support procurement of 1,528 JLTVs and 1,381 trailers. This reflects an increase in funding for this program (\$574.6 million was enacted for FY 2022), suggesting that the Army is committed to this program, at least in the short term. Considering the 5,426 JLTVs the Army has already procured,⁷⁵ as well as procurement at a rate of 1,528 vehicles (the FY 2023 rate), the Army will not reach its procurement objective for the JLTV until 2050, thereby forcing continued reliance on aging HMMWVs, which began fielding in 1983.⁷⁶

Mobile Protected Firepower (MPF). The Army is developing an armored gun system called Mobile Protected Firepower to provide IBCTs with the firepower to engage enemy armored vehicles and fortifications. In 2020, the Army received 24 prototypes (12 each from General Dynamics Land Systems and BAE) for testing and evaluation. The Army announced in June 2022 that the winner of the competition was General Dynamics Land Systems. The first units are expected to receive MPF in FY 2025.⁷⁷

Ground Mobility Vehicle (GMV). Airborne BCTs are the first IBCTs to receive a new platform to increase their speed and mobility. The GMV (also referred to as the Infantry Squad Vehicle) provides enhanced tactical mobility for an IBCT nine-soldier infantry squad with their associated equipment. GM Defense was selected for the production contract in

TABLE 5

Procurement of Select Army Systems Will Take Decades to Complete

System	Army Acquisition Objective	Funded Through FY 2023	Years Needed to Complete Army Fielding at FY 2023 Procurement Rate
Armored Multi-Purpose Vehicle (AMPV)	2,897	519	33
Joint Assault Bridge (JAB)	297	126	28
Armored Breacher Vehicle (ABV)	201	48	13
Mobile Protected Firepower (MPF)	504	51	16
Paladin Integrated Management (PIM) Howitzer	689	378	12
Joint Lightweight Tactical Vehicle (JLTV)	49,099	4,757	29

SOURCES: U.S. Department of the Army, *Department of Defense Fiscal Year (FY) 2023 Budget Estimates, Army, Justification Book of Procurement of W&TCV, Army*, April 2022, pp. 1 and 81, https://www.asafm.army.mil/Portals/72/Documents/BudgetMaterial/2023/Base%20Budget/Procurement/WTCV_ARMY_II.pdf (accessed August 17, 2022), and U.S. Department of the Army, *Department of Defense Fiscal Year (FY) 2023 Budget Estimates, Army, Justification Book Volume 1 of 3, Other Procurement, Army, Tactical and Support Vehicles, Budget Activity 1*, April 2022, p. 49, https://www.asafm.army.mil/Portals/72/Documents/BudgetMaterial/2023/Base%20Budget/Procurement/OPA_BA1_Tactical_Support_Vehicles.pdf (accessed August 17, 2022).

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June 2020. The Army has approved a procurement objective of 11 IBCT sets at 59 vehicles per IBCT for a total of 649 vehicles. The approved Army acquisition objective is 2,406, but for some unspecified reason, funding for the program is projected to stop in FY 2024 with 848 systems procured.⁷⁸

Combat Aviation Brigade. CABs are composed of AH-64 Apache attack, UH-60 Black Hawk medium-lift, and CH-47 heavy-lift Chinook helicopters. The Army has been methodically upgrading these fleets for decades, but the FY 2023 budget request continues the reduction in aircraft procurement that began in FY 2022. This continued cutback in helicopter modernization, if enacted, would extend the amount of time necessary to put aircraft crews in the latest version of these critical platforms. This is a continued reflection of downward budget pressure and incurs additional risk for the Army.

UH/HH-60. The acquisition objective for the H-60 medium-lift helicopter is 1,375 H-60Ms and 760 recapitalized 60-A/L/Vs for a total of 2,135 aircraft. The FY 2023 procurement request for the UH-60M is \$718.5 million, which would support the

procurement of 25 aircraft (one more than the 24 requested in FY 2021 before congressional adds).⁷⁹

CH-47. The CH-47F Chinook, a rebuilt variant of the Army's CH-47D heavy-lift helicopter, has an acquisition objective of 535 aircraft (a reduction of 15 from last year) and, with no replacement on the horizon, is expected to remain the Army's heavy-lift helicopter for the foreseeable future. The FY 2023 budget request of \$187.9 million would support the service life extension of six aircraft, all of which would be the MH-47G special operations model.⁸⁰

AH-64. The AH-64E heavy attack helicopter has an acquisition objective of 812 aircraft (a combination of remanufactured and new build), which is being met by the building of new aircraft and remanufacturing of older AH-64 models. The \$693.9 FY 2023 procurement request would support the purchase of 35 AH-64E aircraft⁸¹ (five more than the 30 requested in the FY 2022 budget before congressional adds).

Overall, the Army's equipment inventory, while increasingly dated, is maintained well. Despite high usage in Afghanistan and Iraq, most Army platforms

are relatively “young” because the Army deliberately undertook and Congress funded a “reset” plan that includes “[r]epairing and reconditioning systems to bring them back to a satisfactory operating condition.” Under its current modernization plans, “the Army envisions [the M-1 Abrams Tank, the M-2/M-3 Bradley Fighting Vehicle (BFV), and the M-1126 Stryker Combat Vehicle] to be in service with Active and National Guard forces beyond FY 2028.”⁸²

In addition to seeing to the viability of today’s equipment, the military must look to the health of future equipment programs. Although future modernization programs are not current hard-power capabilities that can be applied against an enemy force today, they are a leading indicator of a service’s overall fitness for future sustained combat operations. In future years, the service could be forced to engage an enemy with aging equipment and no program in place to maintain viability or endurance in sustained operations.

The U.S. military services are continually assessing how best to stay a step ahead of competitors: whether to modernize the force today with currently available technology or wait to see what investments in research and development produce years down the road. Technologies mature and proliferate, becoming more accessible to a wider array of actors over time.

After years of a singular focus on counterinsurgency followed by concentration on the current readiness of the force, the Army is now playing catch-up in equipment modernization. General Milley, for example, has said that China is “on a path...to be on par with the U.S. at some point in the future.”⁸³ While his statement is intentionally ambiguous, General Milley was clearly conveying his concern about the pace of China’s modernization and the very real danger that the U.S. military could lose its current advantages.

New Organizations and Emphasis on Modernization. In 2017, the Army established eight cross-functional teams (CFTs) to improve the management of its top modernization priorities, and in 2018, it established a new four-star headquarters, Army Futures Command, to lead modernization efforts.⁸⁴ Time will tell whether the new structures, commands, and emphasis result in long-term improvement in modernization posture. The Army aspires to develop and procure an entire new generation of equipment based on its six modernization

priorities: “long range precision fires, next generation combat vehicles, future vertical lift, network, air and missile defense, and Soldier lethality.”⁸⁵

Although the Army has put in place new organizations, plans, and strategies to manage modernization, the future is uncertain, and Army programs are in a fragile state with only a few in an active procurement status. The Army has shown great willingness to make tough choices and reallocate funding toward its modernization programs, but this has usually been at the expense of end strength or reduction in the total quantity of new items purchased. “There has been real progress in [modernization] over the last three or four years, but that progress is fragile,” Lieutenant General James Pasquarette, a former senior Army budget official, has warned. “We continue to fund [the top] priority programs at the cost of the other programs in the equipping portfolio.”⁸⁶

As budget challenges such as nuclear deterrence programs, inflation, rising personnel costs, health care, and the need to invest in programs to respond to China’s increasingly aggressive activities continue to present themselves, the Army desperately needs time and funding to modernize its inventory of equipment. Recent modernization programs seem to be on track except for the OMFV program and the Integrated Visual Augmentation System,⁸⁷ both of which needed a reboot. Limited numbers of Stryker vehicle-mounted Maneuver Short Range Air Defense (M-SHORAD) systems have been delivered to Europe.⁸⁸ Army officials are currently optimistic about future fielding dates for equipment like the Extended Range Cannon Artillery, a hypersonic weapon firing battery, and the Precision Strike Missile, all of which are scheduled to begin delivery in FY 2023, but their success will depend on sustained funding.

Readiness

BCT Readiness. Over the past four years, the Army has made significant progress in increasing the readiness of its forces. Its goal is to have 66 percent of the Regular Army and 33 percent of National Guard BCTs at the highest levels of readiness.⁸⁹

As of July 6, 2022, the Army reported that “81 percent of Active Component Brigade Combat Teams are at the highest levels of tactical readiness,”⁹⁰ 15 percentage points above its goal and 23 percentage points above last year’s reported level. This means that 25 of the Army’s 31 active BCTs were at either C1 or C2, the two highest levels of tactical readiness,

and ready to perform all or most of their wartime missions immediately. The *2022 Index* reported that 21 Regular Army BCTs were at the highest levels of readiness.

There also are 27 BCTs in the Army National Guard: five Armor, 20 Infantry, and two Stryker. The Army has allocated two Combat Training Center (CTC) rotations for two National Guard BCTs. The two BCTs conducting CTC rotations “are resourced to achieve company-level proficiency,” and the remaining 25 “are on a path to platoon minus-level proficiency.”⁹¹ These training levels dictate that additional training time would be required before the unit could be deployed.

Training Resources Slashed. In the FY 2023 budget request, funding for training activities is maintained at the low level first established in FY 2022. When measuring training resourcing for Brigade Combat Teams, the Army uses full-spectrum training miles (FSTMs), which represents the number of miles that formations are resourced to drive their primary vehicles on an annual basis. For Combat Aviation Brigades, the Army uses hours per crew per month (H/C/M), which reflects the number of hours that aviation crews can fly their helicopters per month.

According to the Army’s budget justification exhibits, “[t]he FY 2023 budget funds unit Operating Tempo (OPTEMPO) at 1,235 Full Spectrum Training Miles for non-deployed units” and “358,000 Flying Hours (11.1 hours per crew per month), an increase from FY 2022 (10.3 H/C/M)” to meet “required training readiness levels.” The FY 2023 proposed active FSTM is slightly higher (7 percent) than resourced levels of 1,150 miles and higher (11 percent) than the 10.0 active flying hours per crew per month enacted in the FY 2022 budget.⁹²

Training Level Goals Reduced. The Army is coping with reduced training resources by shifting

training to lower echelons, where it is less expensive. Its strategy, begun in FY 2022, “focuses resources on squad, platoon and company level training to achieve highly trained companies.”⁹³ Starting with the FY 2022 budget justification books, the Army began to omit the Unit Proficiency Level Goal, which for years has been BCT; it is likely now battalion or company.

CTC Rotations. The Army uses Combat Training Centers to train its forces to desired levels of proficiency. Specifically, this important program “provide[s] realistic joint and combined arms training...approximating actual combat” and increases “unit readiness for deployment and warfighting.”⁹⁴ For FY 2023, “the Army is resourcing 22 Brigade Combat Team (BCT)-level CTC rotations...(17 Active BCT-level rotations, 2 BCT-level for the Army National Guard, and 3 for units on rotation in Europe).”⁹⁵

New Readiness Model. The Army has transitioned from one readiness model to another. Its Sustainable Readiness Model, implementation of which began in 2017, was intended to give units more predictability. Its new Regionally Aligned Readiness and Modernization Model (ReARMM) is designed to “better balance operational tempo (OPTEMPO) with dedicated periods for conducting missions, training, and modernization.”⁹⁶ ReARMM features units that spend eight months in a modernization-training-mission cycle while preparing to deploy to a specific part of the world. The Army shifted to this new model on October 1, 2021.⁹⁷

In general, the Army continues to be challenged by structural readiness problems as evidenced by too small a force attempting to satisfy too many global presence requirements and Operations Plan (OPLAN) warfighting requirements. If demand is not reduced, the funding cuts and end strength reduction featured in the FY 2023 budget can be expected to result in a continued decline in readiness.

Scoring the U.S. Army

Capacity Score: Weak

Historical evidence shows that, on average, the Army needs 21 Brigade Combat Teams to fight one major regional conflict (MRC). Based on a conversion of roughly 3.5 BCTs per division, the Army deployed 21 BCTs in Korea, 25 in Vietnam, 14 in the Persian Gulf War, and approximately four in

Operation Iraqi Freedom—an average of 16 BCTs (or 21 if the much smaller Operation Iraqi Freedom initial invasion operation is excluded). In the 2010 Quadrennial Defense Review, the Obama Administration recommended a force capable of deploying 45 Active BCTs. Previous government force-sizing documents discuss Army force structure in terms

of divisions and consistently advocate for 10–11 divisions, which equates to roughly 37 Active BCTs.

Considering the varying recommendations of 35–45 BCTs and the actual experience of nearly 21 BCTs deployed per major engagement, our assessment is that 42 BCTs would be needed to fight two MRCs.⁹⁸ Taking into account the need for a strategic reserve, the Army force should also include an additional 20 percent of the 42 BCTs, resulting in an overall requirement of 50 BCTs.

Previous editions of the *Index* had counted a small number of Army National Guard BCTs in the overall count of available BCTs. Because the Army no longer makes mention of Army National Guard BCTs at the highest state of readiness, they are no longer counted in this edition of the *Index*. The Army has 31 Regular Army BCTs compared to a two-MRC construct requirement of 50. The Army’s overall capacity score therefore remains unchanged from 2022.

- **Two-MRC Benchmark:** 50 Brigade Combat Teams.
- **Actual FY 2022 Level:** 31 Regular Army Brigade Combat Teams.

The Army’s current BCT capacity equals 62 percent of the two-MRC benchmark and is therefore scored as “weak.”

Capability Score: Marginal

The Army’s aggregate capability score remains “marginal.” This aggregate score is a result of “marginal” scores for “Age of Equipment,” “Size of Modernization Programs,” and “Health of Modernization Programs.” More detail on these programs can be found in the equipment appendix following this section. The Army is scored “weak” for “Capability of Equipment.”

Despite modest progress with the JLTV, Mobile Protected Firepower, Ground Mobility Vehicle, and AMPV programs, and in spite of such promising developments as creation of Army Futures Command, CFTs, and the initiation of new Research, Development, Testing and Evaluation (RDTE) funded programs, nearly all new Army equipment programs remain in the development phase and in most cases are one to two years from entering procurement. FY 2023 requested funding levels for procurement and research and development are down 7 percent compared to the FY 2022 enacted levels, which slows the pace of Army equipping and reduces the speed of procurement to below industry’s minimum sustainment rates in some cases. The result of the FY 2023 budget request would be an Army aging faster than it is modernizing.

Readiness Score: Very Strong

The Army reports that 81 percent of its 31 Regular Army BCTs are at the highest state of readiness.⁹⁹ No National Guard BCTs were at those levels of readiness. The Army’s internal requirement is for “66 percent...of the active component BCTs [to be] at the highest readiness levels.”¹⁰⁰ Using the assessment methods of this *Index*, this results in a percentage of service requirement of 100 percent, or “very strong.”

Overall U.S. Army Score: Marginal

The Army’s overall score is calculated based on an unweighted average of its capacity, capability, and readiness scores. The unweighted average is 3.33; thus, the overall Army score is “marginal.” This was derived from the aggregate score for capacity (“weak”); capability (“marginal”); and readiness (“very strong”). This score is the same as the assessment of the 2022 *Index*, which also rated the Army as “marginal” overall.

U.S. Military Power: Army

	VERY WEAK	WEAK	MARGINAL	STRONG	VERY STRONG
Capacity		✓			
Capability			✓		
Readiness					✓
OVERALL			✓		

ARMY SCORES

1 2 3 4 5
Weakest ← Strongest

Procurement and Spending ■ Through FY 2022
■ Pending

Main Battle Tank

PLATFORM	Age Score	Capability Score	REPLACEMENT PROGRAM	Size Score	Health Score
M1A1/2 Abrams Inventory: 344/1,635 Fleet age: 31.5/14.5 Date: 1980/1993 The Abrams is the Army's primary ground combat system and main battle tank in its Armored Brigade Combat Teams (ABCTs). It is a tracked, low-profile, land combat assault weapon that provides mobility, lethal firepower, and protection. The Abrams went through a remanufacture program to extend its life expectancy to 2045.	3	4	Decisive Lethality Platform (DLP) The DLP program, in its earliest stages of conceptualization, is a notional manned or unmanned vehicle that could replace some or all of the Abrams tanks. This program is part of the Next Generation Combat Vehicle (NGCV) program, which is number two among the Army's "Big Six" modernization priorities. The soonest a replacement for the Abrams tank could conceivably be introduced is 2033.		

Infantry Fighting Vehicle

PLATFORM	Age Score	Capability Score	REPLACEMENT PROGRAM	Size Score	Health Score
M2 Bradley Inventory: 3,310 Fleet age: 23 Date: 1981 The Bradley is a fully tracked, lightly armored vehicle meant to transport infantry by providing protection from artillery and employing mounted firepower. The Bradley complements the Abrams tank in Armored Brigade Combat Teams (ABCTs). The Bradley underwent a remanufacture program to extend its life expectancy to 2045.	3	3	Optionally Manned Fighting Vehicle (OMFV) The OMFV is intended to replace the M2-Bradley Infantry Fighting Vehicle (IFV) and in its objective state will have the ability to conduct remotely controlled operations. In 2021, the Army awarded five firm-fixed-price contracts as part of the OMFV Concept Design Phase in which competing firms were asked to develop digital designs. The Army plans to choose three teams in the third quarter of FY 2023 to build up to 11 prototype vehicles. This program is part of the Next Generation Combat Vehicle (NGCV) program, which is number two among the Army's "Big Six" modernization priorities. The Army plans for the first unit to be equipped by FY 2029.		

Armored Fighting Vehicle

PLATFORM	Age Score	Capability Score	REPLACEMENT PROGRAM	Size Score	Health Score
Stryker Inventory: 4,115 Fleet age: 10.5 Date: 2001 The Stryker is a wheeled vehicle that is the main platform in Stryker BCTs. The program was considered an interim vehicle to serve until the arrival of the Future Combat System (FCS), but that program was cancelled because of technology and cost problems. The original Stryker is being replaced with Double-V-Hull variants. The Double V Hull provides increased under-vehicle blast protection. The Stryker is expected to remain in service for 30-plus years.	4	4	None		

NOTE: See page 353 for details on fleet ages, dates, and procurement spending.

ARMY SCORES

1 2 3 4 5
Weakest ← Strongest

Procurement and Spending ■ Through FY 2022
■ Pending

Armored Personnel Carrier

PLATFORM	Age Score	Capability Score	REPLACEMENT PROGRAM	Size Score	Health Score
M113 Armored Personnel Carrier Inventory: 3,954 Fleet age: 39 Date: 1960 The fully tracked M113 personnel carrier serves in a supporting role for Armored Brigade Combat Teams (ABCTs) and in units above brigade level. As the first mass-produced aluminum combat vehicle, the M113 was made to protect against small arms fire while being light enough to be transportable. The army planned to replace the M113 with the Armored Multi-Purpose Vehicle, but due to reduced production rates and higher commodity prices, the cost per vehicle has increased, and the replacement program will take an extended period of time. Plans are to use the current platform until 2045.	1	2	Armored Multi-Purpose Vehicle (AMPV) Timeline: 2018-TBD The AMPV has been adapted from the Bradley Fighting Vehicle, which largely allowed the program to bypass an extensive technology development phase. The fleet will consist of five variants. Although total AMPV production remains behind schedule due to early manufacturing troubles, AMPV production rates reportedly are planned to increase to 131 vehicles per year by FY 2024 and continue at that rate at least until 2027. PROCUREMENT 4472,450 SPENDING (\$ millions) \$1,578\$13,746	2	4

Light Wheeled Vehicle

PLATFORM	Age Score	Capability Score	REPLACEMENT PROGRAM	Size Score	Health Score
HMMWV Inventory: 108,467 Fleet age: 19.5 Date: 1985 The High Mobility Multipurpose Wheeled Vehicle (HMMWV) is a lightweight, highly mobile, high-performance wheeled vehicle used for a variety of purposes in combat or combat support services units. The expected life span of the HMMWV is 15 years. A portion of the HMMWV fleet is slowly being replaced by the Joint Light Tactical Vehicle (JLTV).	1	1	Joint Light Tactical Vehicle (JLTV) Timeline: 2015-2036 The JLTV vehicle program is an Army-led, joint-service program that is replacing a portion of the Army's HMMWVs with light tactical wheeled vehicles. The JLTV provides improved protection, reliability, maneuverability, and survivability of vehicles. In June 2019, the Army approved the JLTV for full-rate production. Production is underway, although current budget shortfalls have forced the Army to reduce procurement quantities.	3	3

NOTE: See page 353 for details on fleet ages, dates, timelines, and procurement spending.

ARMY SCORES

1 2 3 4 5
Weakest ← Strongest

Procurement and Spending ■ Through FY 2022 ■ Pending

Attack Helicopter

PLATFORM	Age Score	Capability Score	REPLACEMENT PROGRAM	Size Score	Health Score
AH-64 D Apache Inventory: 295 Fleet age: 17.5 Date: 1997 The Apache attack helicopter is designed to support Brigade Combat Teams (BCTs) in the full spectrum of modern warfare including destroying armor, personnel, and material targets. The Apache has a modular open systems architecture that allows it to incorporate the latest communications, navigation, sensor, and weapon systems. The expected life cycle is about 20 years.	2	3	AH-64E Reman Timeline: 2010-TBD The AH-64E Reman (short for remanufactured) is a program to remanufacture older Apache helicopters into the more advanced AH-64E version which is fully digital and meets the Army's joint interoperability goals for the future. The AH-64E has a new airframe and can carry modern munitions, including the JAGM missile, giving it significant combat capability as the Army's only heavy attack helicopter. PROCUREMENT* SPENDING* (\$ millions) 	3	5
AH-64E Inventory: 458 Fleet age: 5 Date: 2012 The AH-64E variant is a remanufactured or newly built version of the AH-64D Apache attack helicopter with substantial upgrades in powerplant, avionics, communications, and weapons capabilities making it the Army's most advanced attack helicopter. The expected life cycle is about 20 years.	5	5	AH-64E New Build Timeline: 2010-2027 The AH-64E New Build program produces new-build, not rebuilt, Apaches. The program is meant to modernize and sustain the current Apache inventory. The AH-64E has more modern and interoperable systems and is able to carry modern munitions, including the JAGM missile. Budget cuts in the 2022 request will likely close the AH-64E new build line as the cost of procurement is significantly higher due to the need for all-new components for the new build program. PROCUREMENT* SPENDING* (\$ millions) 	3	5

* Additional procurement expected.

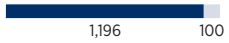
NOTE: See page 353 for details on fleet ages, dates, timelines, and procurement spending.

ARMY SCORES

1 2 3 4 5
Weakest ← Strongest

Procurement and Spending ■ Through FY 2022 ■ Pending

Medium Lift

PLATFORM	Age Score	Capability Score	REPLACEMENT PROGRAM	Size Score	Health Score
UH-60A Black Hawk Inventory: 48 Fleet age: 39.5 Date: 1978 The UH-60A is the Army's primary medium-lift utility transport helicopter that provides air assault, aeromedical evacuation, and support for special operations. The expected life span is about 25 years. This variant of the Black Hawk is now being replaced by the newer UH-60M variant.	1	2	UH-60M Black Hawk Timeline: 2004-TBD The UH-60M, which began full production in 2007, serves to modernize and replace current Black Hawk inventories in line with the Army's Modernization Strategy, National Military Strategy, and National Defense Strategy. The newer M-variant is a digital networked platform that will improve the Black Hawk's range and lift by upgrading the rotor blades, engine, and computers.	3	4
UH-60M Black Hawk Inventory: 1,185 Fleet age: 8.5 Date: 2005 The UH-60M is the modernized version of the original UH-60A Black Hawk helicopter. It has multiple upgrades including multimission capabilities, a new airframe, advanced digital avionics, and a powerful propulsion system. As the UH-60A is retired, the M-variant will be the main medium-lift rotorcraft used by the Army. They are expected to remain in service until at least 2030.	5	4	PROCUREMENT*  SPENDING* (\$ millions) 		

Heavy Lift

PLATFORM	Age Score	Capability Score	REPLACEMENT PROGRAM	Size Score	Health Score
CH-47F Chinook Inventory: 451 Fleet age: 10 Date: 2002 The F-variant of the CH-47 Chinook heavy-lift helicopter includes a new digital cockpit and monolithic airframe to reduce vibrations. It transports forces and equipment while providing other functions such as parachute drops and aircraft recovery. The expected life span is 35 years. The Army plans to use the CH-47F until the late 2030s.	5	5	CH-47F Timeline: 2001-TBD Currently in production, the CH-47F program is intended to keep the fleet of heavy-lift rotorcraft viable for use in modern combat as older variants of the CH-47, notably the CH-47D, are retired. The program includes both remanufactured and new builds of CH-47s. The F-variant has engine and airframe upgrades to lower the maintenance requirements. Total procurement numbers include the MH-47G configuration that is used by U.S. Special Operations Command.	3	4
			PROCUREMENT*  SPENDING* (\$ millions) 		

* Additional procurement expected.

NOTE: See page 353 for details on fleet ages, dates, timelines, and procurement spending.

ARMY SCORES

1 2 3 4 5
Weakest ← Strongest

Procurement and Spending ■ Through FY 2022
■ Pending

Intelligence, Surveillance, and Reconnaissance (ISR)

PLATFORM	Age Score	Capability Score	REPLACEMENT PROGRAM	Size Score	Health Score
MQ-1C Gray Eagle Inventory: 175 Fleet age: 4.75 Date: 2011 The Gray Eagle is a medium-altitude long-endurance (MALE) unmanned aerial vehicle (UAV) used to conduct intelligence, surveillance, and reconnaissance (ISR) missions. It offers better range, altitude, and payload flexibility than was offered by earlier systems. The Army does not plan to procure new Gray Eagles.	4	3	MQ-1C Gray Eagle Timeline: 2010–2022 The MQ-1C UAV is an unmanned aircraft system that provides the Army with reconnaissance, surveillance, and target acquisition capabilities. The Army did not plan to procure new MQ-1Cs for FY2023. Four Gray Eagles originally slotted to go to the Army may be sold to Ukraine as of June 2022.	4	5
			PROCUREMENT SPENDING (\$ millions) 0 \$432 \$25		

* Additional procurement expected.

NOTES: See Methodology for descriptions of scores. Fleet age is the average between the first and last years of delivery. The date is the year of first delivery. The timeline is from the first year of procurement to the last year of delivery/procurement. Spending does not include advanced procurement or research, development, test, and evaluation (RDT&E).

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100. See note 89, *supra*.