U.S. Army

The U.S. Army is America's primary land warfare component. Although it addresses all types of operations across the range of ground force employment, its chief value to the nation is its ability to defeat and destroy enemy land forces in battle.

The Army, more than any other service, has been affected by years of counterinsurgency (COIN) operations in Iraq and Afghanistan. "For the past 17 years," according to former Secretary of the Army Mark Esper, "the Army bore the brunt of the wars in Iraq and Afghanistan. For over a decade, we postponed modernization to procure equipment tailored to counter insurgency operations." Former Army Chief of Staff General Mark Milley has warned similarly that "[i]n the last 17 years, our strategic competitors have eroded our military advantages."[1]

- Modernization programs, such as air defense systems, that were not viewed as complementary to COIN operations were terminated;
- In addition to modernization, Army organizational structure, doctrine, and training were significantly modified to enable increased success in COIN operations;
- Brigade and division capabilities were reduced and realigned to facilitate COIN warfare;
- Combat Training Center rotations focused almost exclusively on COIN scenarios; and
- Leaders and soldiers often went for years without practicing their combat core tasks such as counterbattery fire or tank table gunnery.

When the Army sets its mind to doing something, it generally does it completely and without reservation. Such was the Army's adaptation to COIN operations.

Today, the Army is shifting in accordance with national direction to focus on great-power competition. Characteristically, it is "all in." Combat Training Center scenarios now focus nearly exclusively on high-end decisive action, new matériel programs like longer-range artillery with utility in near-peer competitor situations are being initiated, and organizational structures are being reexamined. Warfighting concepts and doctrine are also shifting to this new construct.

All of this is appropriate, but unlike its approach in the aftermath of the Vietnam War, when the 1976 version of its primary doctrinal manual contained absolutely no mention of COIN operations, the Army thus far has seen fit to preserve some capabilities like Security Force Assistance Brigades, counter-drone equipment, and robust Special Operations capabilities. As it moves into the future, the Army must both guard against allowing the pendulum to swing too far in the new direction of great-power competition and maintain critical capabilities for COIN and stability operations, including their supporting intellectual underpinnings.

Despite the clarity of guidance that was achieved in the 2018 National Defense Strategy (NDS), as well as welcome increases in the

defense budget obtained from fiscal year (FY) 2017 to FY 2019, the need to make up for years of underfunding and different priorities has put the Army behind in the key areas of size and modernization. There is, however, room for cautious optimism. General Milley has testified that with Congress's recent help, "we began to restore our competitive advantage" and that "our recent budgets have helped improve readiness and laid the ground work [*sic*] for future modernization."[2]

The Army is rebounding from direction to cut its strength that was promulgated in the latter half of the Obama Administration. In FY 2019, the Army's authorized Regular Army end strength was 478,000,[3] down from 566,000 as recently as FY 2011.[4] The Obama Administration had planned to cut Regular Army end strength still further to 450,000 by 2018 and as low as 420,000 in future years,[5] but the election of President Donald Trump forestalled those cuts.

According to then-Army Vice Chief of Staff General James C. McConville, if BCA-mandated budget caps returned in FY 2020, "[a]ll the readiness gains we made would be lost. We would not be able to modernize the Army. We'd have to reduce the end strength and we would hurt the quality of life for all our soldiers."[6]

Operationally, the Army "provid[es] Combatant Commanders over 179,000 Soldiers in more than 140 countries, including 110,000 Soldiers deployed on a rotational basis."[7]

Capacity

The Army refers to its warfighting capacity in terms of brigade combat teams. BCTs are the basic building blocks for employment of Army combat forces. They are usually employed within a larger framework of U.S. land operations but are equipped and organized so that they can conduct independent operations as circumstances demand.[8] A BCT averages 4,500 soldiers depending on its variant: Stryker, Armored, or Infantry. A Stryker BCT is a mechanized infantry force organized around the Stryker combat vehicle. Armored BCTs are the Army's primary armored units and employ the M1 Abrams Main Battle Tank and the M2 Bradley Fighting Vehicle. An Infantry BCT is a highly maneuverable dismounted unit. Variants of the Infantry BCT are the Airmobile BCT, optimized for helicopter assault, and the Airborne BCT, optimized for parachute forcible entry operations.

While end strength is a valuable metric in understanding Army capacity, the number of BCTs is a more telling measure of actual hard power. The reductions in Army end strength since 2011 have had a disproportionate effect on BCTs. The Regular Army decreased its 45 BCTs (552,100 soldiers) in FY 2013 to 31 BCTs (480,000 soldiers) in FY 2020.[9] Put another way, a 14 percent reduction in end strength led to a 31 percent reduction in BCTs.

When Congress reversed the drawdown in end strength and authorized growth starting in 2017, instead of "re-growing" BCTs, the Army chose primarily to "thicken" the force and raise the manning levels within the individual BCTs to increase unit readiness. The Army's goal is to fill operational units to 105 percent of their authorized manning by the end of 2020, and it is on track to meet this goal.[10]

The FY 2015 National Defense Authorization Act (NDAA) established a National Commission on the Future of the Army to conduct a comprehensive study of Army structure.[11] To meet the threat posed by a resurgent Russia and others, the commission recommended that the Army increase its numbers of Armored BCTs.[12] The Army converted two BCTs to Armored BCTs in 2018 and 2019, bringing the number of Armored BCTs to 16 and helping to "ensur[e] a more balanced distribution between its light and heavy fighting forces."[13]

The Army also has a separate air component organized into combat aviation brigades (CABs), which can operate independently.[14] CABs are made up of Army rotorcraft, such as the AH-64 Apache, and perform various roles including attack, reconnaissance, and lift. The number of Army aviation units also experienced a drawdown. In May 2015, the Army deactivated one of its 12 CABs, leaving only 11 in the Regular Army.

CABs and Stryker, Infantry, and Armored BCTs make up the Army's main combat forces, but not the entirety of the Army. About 90,000 troops form the Institutional Army and provide such forms of support as preparing and training troops for deployments, carrying out key logistics tasks, and overseeing military schools and Army educational institutions. The troops constituting the Institutional Army cannot be reduced at the same ratio as BCTs or CABs, and the Army endeavors to insulate these soldiers from drawdown and restructuring proposals in order to "retain a slightly more senior force in the Active Army to allow growth if needed."[15] In addition to the Institutional Army, a great number of functional or multifunctional support brigades, amounting to approximately 13 percent of the active component force based on historical averages,[16] provide air defense; engineering; explosive ordnance disposal (EOD); chemical/biological/radiological and nuclear protection; military police; military intelligence; and medical support among other types of battlefield support for BCTs.

In 2017, in a major initiative shepherded by General Milley, the Army established the first of six planned Security Force Assistance Brigades (SFABs). These units, composed of about 530 personnel each, are designed specifically to train, advise, and mentor other partner-nation military units. The Army had been using regular BCTs for this mission, but because train-and-assist missions typically require senior officers and noncommissioned officers, a BCT comprised predominantly of junior soldiers is a poor fit. The Army envisions that these SFABs will be able to reduce the stress on the service.[17] The Army's second SFAB was activated in January 2018 at Fort Bragg, North Carolina, and "is now deployed to Afghanistan."[18] Of the six envisioned SFABs, one will be in the National Guard, and the other five will be in the Regular Army.

In 2019, the Army was authorized a total end strength of 1,002,750 soldiers: 478,000 in the Regular Army, 189,250 in the Army Reserve, and 335,500 in the Army National Guard.[19]

Two years ago, in 2017, General Milley testified that in his judgment, the Regular Army should be in the range of 540,000–550,000; the National Guard, 350,000–355,000; and the Army Reserve, 205,000–209,000.[20] Since that time, with the publishing of the 2018 NDS and its emphasis on great-power competition, the missions and challenges that the Army is expected to handle have increased.

Today, the Regular Army is much smaller than General Milley recommended. During the week of March 20, 2019, the Regular Army stood at 476,477 soldiers—63,523 less than the minimum General Milley estimated was necessary even before the NDS directed a return to great-power competition.[21] Since 2017, General Milley and other senior Army leaders have been more circumspect in their assessments. Secretary Esper, for example, stated in April 2019 that "I can't tell you what the Army end strength will be. I know it has to be above 500,000."[22] This modification in messaging suggests either that the Army enjoys less freedom to discuss its necessary size openly or that fiscal realities preclude discussions of numbers higher than 500,000 for the Regular Army.

Most experts agree that the Army is too small. In the FY 2017 NDAA, Congress established the National Defense Strategy Commission to provide an "independent, non-partisan review of the 2018 NDS."[23] Among its findings, the Commission noted that:

> [T]he United States now faces five credible challengers, including two major-power competitors, and three distinctly different geographic and operational environments. This 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. Instead, the NDS adopts what is functionally a one-war force sizing construct and recommends only modest increases in force capacity, an approach that is likely to create severe strategic and operational vulnerabilities for the

> United States. Even if new technologies such as hypersonic weapons, AI, cyber, and autonomous systems eventually do change the face of warfare, in the near- and medium-term conventional capacity will still matter greatly in fighting and deterring conflict. Consequently, although further capability and posture enhancements are necessary, they are likely to be insufficient to meet America's strategic challenges.... *Simply put, the United States needs a larger force than it has today if it is to meet the objectives of the strategy*.[24]

Moreover, the Army has moved from a force that during the Cold War typically had a third of its personnel stationed overseas to a Continental United States–based force. In 1985, 31 percent of the Army was stationed abroad; in 2015, that figure had fallen to 9 percent.[25] The desire to find a so-called peace dividend following the dissolution of the Soviet Union, combined with the reluctance to close bases in the United States, led to large-scale base closure overseas.

In addition to the increased strategic risk of not being able to execute the NDS within the desired time frame, the result of an insufficient number of BCTs and a diminished Army end strength has been to maintain a higher than desired level of operational tempo (OPTEMPO). Despite a reduction in large unit deployments, particularly to Iraq and Afghanistan, Army units continue to experience sustained demand. In May 2018, the Army was experiencing "a deployment to dwell time ratio of about 1 to 1.2—even though the goal for years has been to level it off at 1-to-2."[26]

Included in these deployments are the rotations of Armored BCTs to and from Europe and Korea. Rather than relying on forward-stationed BCTs, the Army now rotates Armored BCTs to Europe and Korea on a "heel-to-toe" basis. There is an ongoing debate about whether the rotational BCT or the forward-stationed BCT represents the best option. Proponents of rotational BCTs argue that they arrive fully trained and remain at a high state of readiness throughout a typical nine-month overseas rotation; those who favor forward-stationed forces point to a lower cost, forces that typically are more familiar with the operating environment, and a more reassuring presence for our allies.[27]

Additionally, the Army is resourcing select Army National Guard (ARNG) BCTs and other units with additional numbers of training days, moving from the standard number of 39 training days to as many as 63 per year to increase readiness levels. Under a concept called "Army National Guard 4.0," the National Guard has implemented a multiyear training cycle to build readiness over time. As part of this concept, the Army increased the number of National Guard BCTs participating in a Combat Training Center (CTC) rotation from two to four starting in FY 2019.[28] This continues in the fiscal year 2020 budget.[29]

Because of this change in strategy and the increased investment in the National Guard, the 2020 *Index of U.S. Military Strength* counts four ARNG BCTs in the overall Army BCT capacity count. This reflects both their ability to be employed on a dramatically shortened timeline as a result of their training at a Combat Training Center and the increased number of training days.

Capability

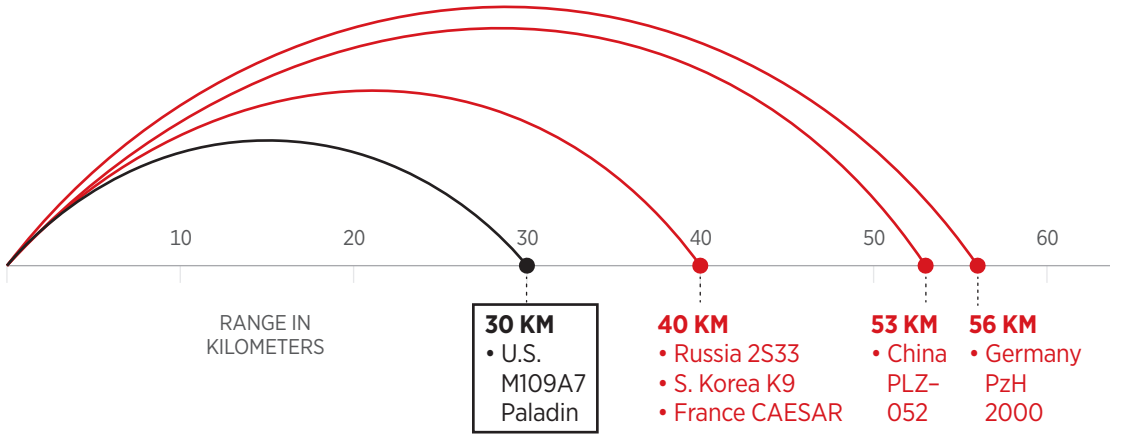
The Army is using equipment designed primarily in the 1970s, fielded in the 1980s, and incrementally upgraded since then. This modernization gap was caused by several factors: preoccupation with the wars in Iraq and Afghanistan, budget cuts including those associated with the Budget Control Act, and failures of major modernization programs like the Future Combat System. Army leaders clearly see this as a challenge and are now striving to modernize the service. In 2020, however, most of their proposed programs are still aspirational and are sensitive to changes in funding or priorities.

The challenge with self-propelled artillery systems illustrates the issue with Army

FIGURE 2

U.S. Artillery Falls Short—Literally—Compared to Rivals

The U.S. M109A7 Paladin artillery system, in the U.S. Army's arsenal since 2015, has a maximum range of only 30 kilometers—10 kilometers less than the range of Russia's 2S33 system and 23 kilometers short of China's PLZ–052.



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modernization. The M109 series howitzer was introduced in the early 1960s and has been upgraded multiple times since then. An important part of an artillery system is its range, and most modern countries have artillery systems that can outrange the Paladin 109A7, the Army's current self-propelled howitzer. The Paladin can fire an artillery shell about 22 km–30 km. The Russian 2S33 Msta-SM2 reportedly can hit targets at 40 km. [30] Similarly, the German Army's PzH 2000, the Chinese PLZ-05, the South Korean K9, and the French CAESAR systems all outrange the Paladin.[31]

The Army's main combat platforms are ground vehicles and rotorcraft.

- The Abrams Main Battle Tank (latest version: M1A2 SEPv3, service entry date 2017) and Bradley Fighting Vehicle (latest version: M2A4, service entry date 2012) are found primarily in Armored BCTs.[32] Also in Armored BCTs, the venerable

M113 personnel carrier is scheduled to be replaced by the new Armored Multi-Purpose Vehicle (AMPV), which in 2018 entered its late testing phase.[33]

- Stryker BCTs are equipped with Stryker vehicles. In response to an Operational Needs Statement, the Stryker BCT (SBCT) in Europe received Strykers fitted with a 30 mm cannon to provide an improved anti-armor capability. [34] The Army recently decided to outfit three of its SBCTs, the ones equipped with the "double V hull," with the 30 mm autocannon.[35]

- Infantry BCTs have fewer vehicles and rely on lighter platforms such as trucks and High Mobility Multipurpose Wheeled Vehicles (HMMWVs) for mobility.

- The Army is developing a Mobile Protected Firepower system to provide Infantry Brigade Combat Teams with the firepower to engage enemy armored vehicles and fortifications. It hopes to produce 24 prototypes for testing during FY 2020.[36]

- Airborne BCTs are scheduled to receive a new platform, the Ground Mobility Vehicle (GMV), starting in 2019 to increase their speed and mobility. It is anticipated that five airborne BCTs will be equipped by the third quarter of FY 2020.[37]

- Finally, CABs are composed of Army helicopters including AH-64 Apaches, UH-60 Black Hawks, and CH-47 Chinooks.

Overall, the Army's equipment inventory, while increasingly dated, is well maintained. Despite high usage in Afghanistan and Iraq, because the Army deliberately undertook a "reset" plan, most Army vehicles are relatively "young" because recent remanufacture programs for the Abrams and Bradley vehicles have extended their service lives beyond FY 2028.[38] While the current equipment is well maintained and has received several incremental upgrades, Abrams and Bradley vehicles first entered service in the early 1980s, making them approximately 38 years old.

The Army has also been methodically upgrading the oldest variants of its rotorcraft. Today, the UH-60M, the newest version of the UH-60, accounts for approximately two-thirds of the total UH-60 inventory. Similarly, the CH-47F Chinook, a rebuilt variant of the Army's CH-47D heavy lift helicopter, is expected to "remain the Army's heavy lift helicopter for the next several decades."[39] However, because the Army has added to procurement programs other than aviation, its $3.7 billion FY 2020 budget request for aircraft procurement[40] is $600 million less than the FY 2019 enacted amount.

In addition to the viability of today's equipment, the military must ensure the health of future programs. Although future modernizing programs are not current hard-power capabilities that can be applied against an enemy force today, they are a significant indicator of a service's overall fitness for future sustained combat operations. The service may be able to engage an enemy but be forced to do so 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 because of the wars in Iraq and Afghanistan, followed by a concentration on the readiness of the force, the Army is now playing catch-up in the area of equipment modernization. Secretary Esper has testified that "[i]f left unchecked, Russia and China will continue to erode the competitive military advantage we have held for years."[41]

Secretary Esper has established a new four-star headquarters, Army Futures Command,

to manage modernization. It achieved initial operating capability (IOC) in the summer of 2018 and plans to reach "full operating capacity in summer 2019."[42] Additionally, the Army has established eight cross-functional teams (CFTs) to improve the management of its top modernization priorities.[43] The Under Secretary and Vice Chief of Staff of the Army are devoting an extraordinary amount of time to issues of equipment modernization, but only time will tell whether the new structures, commands, and emphasis will 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 new modernization priorities: long-range precision fires, next-generation combat vehicle, future vertical lift, the network, air and missile defense, and soldier lethality. Thirty-one programs flow from these programs, and the Army has shifted $33 billion inside of its five-year program to fund them.[44] Two of the programs that lost money in this shift were the Joint Lightweight Tactical Vehicle (JLTV) and the CH-47F cargo helicopter.

The JLTV, ironically, is the only new-design Army Major Defense Acquisition Program (MDAP) currently underway. Intended to combine the protection offered by Mine Resistant Ambush Protected Vehicles (MRAPs) with the mobility of the original unarmored HMMWV, the JLTV features design improvements that will increase its survivability against anti-armor weapons and improvised explosive devices (IEDs). The Army had planned to procure 49,099 vehicles over the life of the program, replacing only a portion of the current HMMWV fleet. The JLTV is "capable of performing multiple mission roles and designed to provide protected, sustained, networked mobility for personnel and payloads across the full range of military operations."[45] Recent statements by Army leaders call into question the commitment to the program, and Secretary Esper has expressed uncertainty about the program's future.[46]

Requested FY 2020 Base Procurement of $996 million supports 2,530 JLTVs of various configurations to fulfill the requirements of multiple mission roles and minimize ownership costs for the Army's Light Tactical Vehicle fleet.[47] Among other notable Army procurements requested in the FY 2020 budget are the M1A2 Abrams SEPv3 upgrade (165); M2 Bradley modifications (128); the Missile Segment Enhancement (MSE) interceptor (147); the UH-60M Black Hawk (73); and AH-64E Apache Block IIIA remanufacture (48).[48]

Similar to the rest of its modernization programs, the Army's rotorcraft modernization programs do not include any new platform designs. Instead, the Army is upgrading current rotorcraft to account for more advanced systems and developing future aircraft systems under a Future Vertical Lift program.

The Army's main modernization programs are not currently encumbered by any major problems, but there is justifiable concern about past difficulties and current status. Many new research and development programs have been initiated with an extraordinary amount of publicity and oversight. Only time will tell whether they prove to be successful.

Readiness

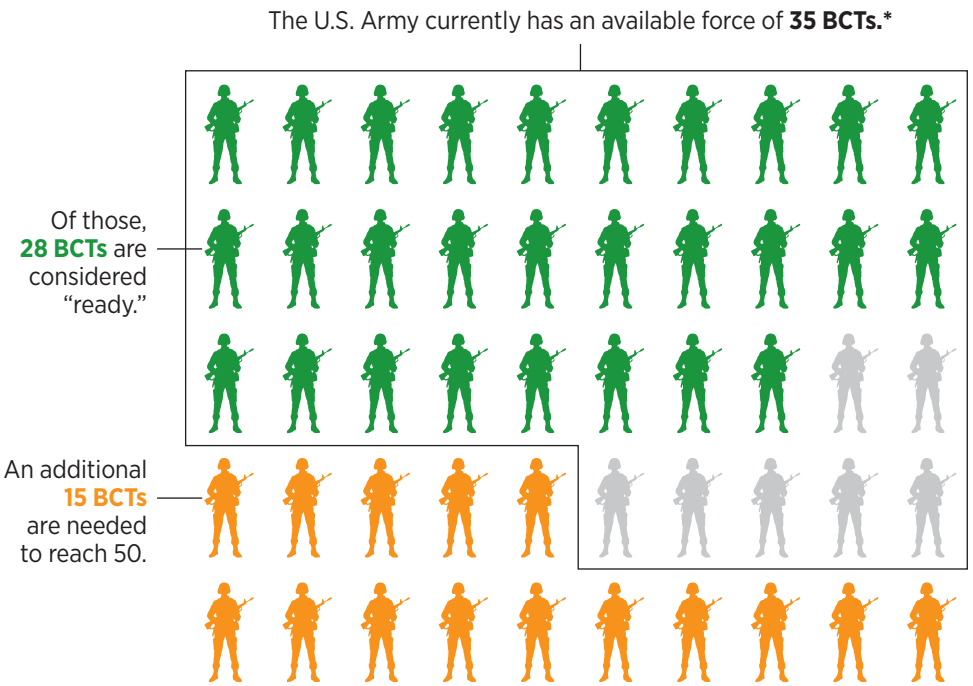
The Army has made progress in increasing the readiness of its forces. The Army's goal is to have 66 percent of its Regular Army and 33 percent of National Guard Brigade Combat Teams at the highest levels of readiness. In March 2019, General Milley assessed that 28 of the Army's 58 Total Army BCTs (48 percent) had reached the highest readiness levels, and Secretary Esper testified that "we have increased the number of fully ready brigade combat teams by 55 percent over the past two years."[49] This would suggest that about 13 BCTs were at the highest levels of readiness two years ago. Further analysis is difficult because General Milley did not provide a breakout of the number of Regular Army versus National Guard Brigades.

As part of the $716 billion provided for defense in the 2019 defense appropriations bill, Congress provided much-needed relief to the Army by appropriating approximately $179

FIGURE 3

Army Readiness: Brigade Combat Teams

Based on historical force requirements, Heritage Foundation experts assess that the Army needs a total of 50 Brigade Combat Teams (BCTs). In addition to active-duty forces, the Army National Guard has four BCTs that operate at a high level of readiness.



* Includes four Army National Guard BCTs.

SOURCES: *Congressional Quarterly*, "Senate Armed Services Committee Holds Hearing on Fiscal 2020 Budget Request for the Army," CQ Congressional Transcripts, March 26, 2019, https://plus.cq.com/doc/congressionaltranscripts-5493831?5 (accessed May 20, 2019), and Heritage Foundation research.

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billion. This influx of resources, combined with on-time funding, has had a very positive effect on the rebuilding of readiness.[50]

In the FY 2020 budget request, training activities are relatively well resourced. When measuring training resourcing, the Army uses operating tempo full-spectrum training miles and flying hours, which reflect the number of miles that formations are resourced to drive their primary vehicles on an annual basis and the number of hours that aviators can fly their helicopters per month.[51] According to the Department of the Army's budget justification exhibits, "[t]he FY 2020 budget funds 1,549 annual Operating Tempo Full Spectrum Training Miles and 11.6 flying hours per crew, per month for an expected overall training proficiency of BCT-level."[52] These are far higher than resourced levels of 1,279 miles and 10.8 hours in FY 2019.

The Army reports that readiness increased broadly across all units by 11 percent from

September 2016 to December 2018. Part of this improvement is due to the Army's success in reducing the percentage of soldiers who are non-deployable from 15 in 2015 to six today. Nonetheless, structural readiness problems summarized by too small a force attempting to satisfy too many global presence requirements and Operations Plan (OPLAN) warfighting requirements will continue to challenge the Army. After years of high OPTEMPOs and sustained budget cuts, the Army does not expect to "achieve our readiness objectives" until 2022.[53]

Since March 2016, the Army has been running a program to increase the integration and readiness of select Army National Guard and Reserve formations so that they can be employed more easily when needed. The Army's Associated Units pilot program links select Regular Army and Reserve component units. In June 2018, for example, Vermont's 86th Infantry Brigade was associated with the Regular Army's 10th Mountain Division for an exercise at Fort Drum, New York.[54] Twenty-seven units across the country are participating in this pilot program, which will be evaluated in 2019 to determine whether it should be made permanent.[55]

As part of its new Sustainable Readiness Model (SRM),[56] the Army uses Combat Training Centers to train its forces to desired levels of proficiency. Specifically, the CTC program's mission is to "provide realistic joint and combined arms training" to approximate actual combat and increase "unit readiness for deployment and warfighting."[57] The Army requested resources for 32 CTC rotations in FY 2020, including four for the Army National Guard.[58] Another change in the Army's training model involves the implementation of a system of Objective T metrics that seeks to remove the subjectivity behind unit commander evaluations of training. Under the Objective T program, the requirements that must be met for a unit to be assessed as fully ready for combat are to be made clear and quantitative.[59]

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. 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 around 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 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.[60] Taking into account the need for a strategic reserve, the Army force should also include an additional 20 percent of the 42 BCTs.

Because of the investment the Army has made in National Guard readiness, this *Index* counts four additional ARNG BCTs in the Army's overall BCT count, giving them 35 (31 Regular Army and four ARNG), but 35 is still not enough to meet the two-MRC construct. The service's overall capacity score therefore remains unchanged from 2019.

- **Two-MRC Benchmark:** 50 brigade combat teams.
- **Actual projected 2020 Level:** 35 (31 Regular Army and four ARNG) brigade combat teams.

The Army's current BCT capacity meets 70 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 scored "weak" for "Capability of Equipment."

In spite of modest progress with the JLTV and AMPV, and in spite of promising developments in the form of announcements regarding Army Futures Command, CFTs, and the initiation of new Research, Development, Testing and Evaluation (RDTE) funded programs, new Army equipment programs remain in the development phase and in most cases are years from entering procurement phases. Therefore, they are not yet replacing legacy platforms and do not contribute to the Army's current warfighting capability. These planned procurements are highly sensitive to any turbulence or reduction in funding.

Readiness Score: Very Strong

The Army has said that it has 28 Total Army BCTs at the highest readiness levels. Four of those BCTs are likely National Guard Brigades, because the Army is focusing personnel, equipment, and training on those units, leaving an estimated 24 Regular Army BCTs out of 31 that are ready (77 percent). The Army's internal requirement for Active BCT readiness is 66 percent, or 20.5 BCTs ready. 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 2019 *Index*, which also rated the Army as "marginal."

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 2019 ■ Pending

Main Battle Tank

PLATFORM	Age Score	Capability Score	REPLACEMENT PROGRAM	Size Score	Health Score
M1A1/2 Abrams Inventory: **775/1611** Fleet age: **30.5/13.5** Date: **1985/1992** The Abrams is the main battle tank used by the Army in its armored brigade combat teams (BCTs). Its main benefits are lethality, protection, and mobility. The Abrams went through a remanufacture program to extend its life to 2045.	3	4	**Decisive Lethality Platform (DLP)** The DPL program is intended to replace the Abrams tank. This program is part of the Next Generation Combat Vehicle (NGCV) program, which is number two among the Army's "Big Six" modernization priorities.		

Infantry Fighting Vehicle

PLATFORM	Age Score	Capability Score	REPLACEMENT PROGRAM	Size Score	Health Score
M2 Bradley Inventory: **3,700** Fleet age: **19** Date: **1981** The Bradley is a tracked vehicle meant to transport infantry and provide covering fire. The Bradley complements the Abrams tank in armored BCTs. Originally intended to be replaced by the Ground Combat Vehicle (GCV, now canceled), the Bradley underwent a remanufacture program to extend its life to 2045.	3	3	**Optionally Manned Fighting Vehicle (OMFV)** In March 2019, the Army issued a request for proposals to competitively build prototypes of the OMFV. The units are expected to be fielded by the end of FY2026. This program is part of the Next Generation Combat Vehicle (NGCV) program, which is number two among the Army's "Big Six" modernization priorities.		

Armored Fighting Vehicle

PLATFORM	Age Score	Capability Score	REPLACEMENT PROGRAM	Size Score	Health Score
Stryker Inventory: **4,367** Fleet age: **9** 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 due to technology and cost hurdles. The original Stryker is being replaced with a double-v hull configuration (DVH) to increase survivability and a 30mm gun to increase lethality. Its components allow for rapid acquisition and fielding. The Stryker is expected to remain in service for 30 years.	4	4	None		

NOTE: See page 338 for details on fleet ages, dates, and procurement spending.

ARMY SCORES

1 2 3 4 5
Weakest ⟷ Strongest

Procurement and Spending ■ Through FY 2019 ■ Pending

Armored Personnel Carrier

PLATFORM	Age Score	Capability Score	REPLACEMENT PROGRAM	Size Score	Health Score
M113 Armored Personnel Carrier Inventory: **5,000** Fleet age: **35** Date: **1960** The tracked M113 is a supporting role for armored BCTs and in units above brigade level. The APC is being slowly replaced by the Armored Multi Purpose Vehicle (AMPV). Plans are to use the platform until 2045.	2	2	**Armored Multi-Purpose Vehicle (AMPV)** Timeline: **2018–TBD** The AMPV will be adapted from an existing vehicle design which allowed the program to bypass the technology development phase. The fleet will consist of five variants. The first unit is set to be equipped at the end of 2021. **PROCUREMENT** 328 2,569 **SPENDING** *($ millions)* $1,231 $13,377	2	4

Light Wheeled Vehicle

PLATFORM	Age Score	Capability Score	REPLACEMENT PROGRAM	Size Score	Health Score
HMMWV Inventory: **100,000** Fleet age: **17** Date: **1985** The HMMWV is used to transport troops and for a variety of purposes, for example, as ambulances. The expected life span of the HMMWV is 15 years. Some HMMWVs will be replaced by the Joint Light Tactical Vehicle (JLTV).	2	1	**Joint Light Tactical Vehicle (JLTV)** Timeline: **2015–2036** The JLTV vehicle program is meant to replace some of the Army's HMMWVs and provide improved protection, reliability, and survivability of vehicles. So far the program has experienced a one-year delay due to changes in vehicle requirements. This is a joint program with USMC. In June 2019, the Army approved the JLTV for full rate production. **PROCUREMENT** 8,022 40,729 **SPENDING** *($ millions)* $3,116 $17,588	3	4

NOTE: See page 338 for details on fleet ages, dates, and procurement spending.

ARMY SCORES

1 2 3 4 5
Weakest ⟷ Strongest

Procurement and Spending ■ Through FY 2019 ■ Pending

Attack Helicopter

PLATFORM	Age Score	Capability Score	REPLACEMENT PROGRAM	Size Score	Health Score
AH-64 D Apache Inventory: **464** Fleet age: **13.5** Date: **1997** The Apache is found in Army Combat Aviation Brigades. It can destroy armor, personnel, and material targets. The expected life cycle is about 20 years.	1	3	**AH-64E Reman** Timeline: **2010–2027** The AH-64E Reman is a program to remanufacture older Apache helicopters into the more advanced AH-64E version. The AH-64E will have more modern and interoperable systems and be able to carry modern munitions, including the JAGM missile. **PROCUREMENT*** 388 **SPENDING*** *($ millions)* $4,347	3	5
AH-64E Inventory: **250** Fleet age: **3.5** Date: **2012** The AH-64E variant is a remanufactured version with substantial upgrades in power plant, avionics, communications, and weapons capabilities. The expected life cycle is about 20 years.	5	5	**AH-64E New Build** Timeline: **2010–2027** The AH-64E New Build program produces new-build, not re-build, Apaches. The program is meant to modernize and sustain the current Apache inventory. The AH-64E has more modern and interoperable systems and is able to carry modern munitions, including the JAGM missile. FY2019 defense appropriation support increased procurement quantities to address National Guard shortfalls. **PROCUREMENT*** 74 **SPENDING*** *($ millions)* $2,417	3	5

Medium Lift

PLATFORM	Age Score	Capability Score	REPLACEMENT PROGRAM	Size Score	Health Score
UH-60A Black Hawk Inventory: **250** Fleet age: **35.5** Date: **1978** The UH-60A is a utility helicopter that provides air assault, aeromedical evacuation, and supports 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, currently in production, is intended to modernize and replace current Black Hawk inventories. The newer M-variant will improve the Black Hawk's range and lift by upgrading the rotor blades, engine, and computers. **PROCUREMENT*** 1,049 **SPENDING*** *($ millions)* $18,815	3	5
UH-60M Black Hawk Inventory: **1,022** Fleet age: **7** Date: **2005** The UH-60M is the follow-on helicopter to the UH-60A. 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			

* Additional procurement expected.

NOTE: See page 338 for details on fleet ages, dates, and procurement spending.

ARMY SCORES

1 2 3 4 5
Weakest ⟷ Strongest

Procurement and Spending ■ Through FY 2019 ■ Pending

Heavy Lift

PLATFORM	Age Score	Capability Score	REPLACEMENT PROGRAM	Size Score	Health Score
CH-47F Chinook Inventory: **519** Fleet age: **8.5** Date: **2002** The F-variant 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 healthy as older variants of the CH-47 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 for U.S. Special Operations Command **PROCUREMENT*** 364 **SPENDING*** *($ millions)* $10,260	3	5

Intelligence, Surveillance, and Reconnaissance (ISR)

PLATFORM	Age Score	Capability Score	REPLACEMENT PROGRAM	Size Score	Health Score
MQ-1C Gray Eagle Inventory: **164** Fleet age: **4** Date: **2011** The Gray Eagle is a medium-altitude long-endurance (MALE) unmanned aerial vehicle (UAV) used to conduct ISR missions. The use of MALE UAVs is a new capability for the Army. The Gray Eagle is currently in production.	4	4	**MQ-1C Gray Eagle** Timeline: **2010–2022** The MQ-1C UAV provides Army reconnaissance, surveillance, and target acquisition capabilities. The Army is continuing to procure MQ-1Cs to replace combat losses. **PROCUREMENT** 221 12 **SPENDING** *($ millions)* $3,775 $108	3	5

* Additional procurement expected.

NOTES: See methodology for descriptions of scores. The Fleet age is the average between the first and last year 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.

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