# 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. Operationally, as of May 20, 2021, the Army had 167,370 soldiers forward located in 142 countries.<sup>1</sup> On May 5, 2021, the Acting Secretary of the Army and the Army Chief of Staff testified that:

Over 69,000 Soldiers are in the Indo-Pacific, including over 25,000 forward deployed on the Korean peninsula. Over 30,000 Soldiers are in Europe supporting NATO and the European Deterrence Initiative, including the forward command post of our newly reactivated V Corps. We remain dedicated to our counterterrorism and train, advise, assist missions, providing over 21,000 Soldiers in support of the U.S. Central Command theater.<sup>2</sup>

The Army, like the other military services, finds itself at a strategic inflection point. That it needs to evolve and transform is unquestioned. Advances in firepower like ballistic missiles and kamikaze 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 bold ideas about how to take advantage of this technology.

However, whether the necessary resources will be available to enable such change is open to question. Since fiscal year (FY) 2019, the Army's budget has decreased, and the Administration's FY 2022 budget request for the Army takes a sharp downward drop from \$177 billion in FY 2021 to \$173 billion requested for FY 2022. If this requested amount is approved, the Army may not be able to achieve its vision of modernizing and regaining its technological advantage while preserving readiness and sufficient end strength. The FY 2022 proposed Army budget sharply reduces training programs and exercises and drastically curtails many equipment programs.<sup>3</sup>

**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 and ignore what it means to be engaged in global competition with a near peer. 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.<sup>4</sup>

Many also seem to 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.

A Difficult Year. The Army has largely surmounted the challenges posed by the COVID-19 pandemic. The virus affected Army recruiting efforts in 2020, but in the end, the Army achieved its desired overall end strength, albeit by relying more on reenlistments.<sup>5</sup> The magnitude of Army support for the fight against the pandemic stands in sharp contrast to the views of those who opine that our national security infrastructure is not designed to counter threats like novel coronaviruses.<sup>6</sup>

The Army's contributions to this fight were both multiple and noteworthy. Operation Warp Speed, the prior Administration's herculean effort to jump-start the production of COVID-19 vaccines, was a Department of Defense (DOD)–Department of Health and Human Services operation that included multiple senior Army officers and was co-led by Army General Gus Perna.<sup>7</sup> During the height of the pandemic, the Army Corps of Engineers built dozens of treatment centers, and Army soldiers were deployed throughout the country to help administer vaccines. More than 47,000 National Guard personnel were deployed to help states combat the pandemic.<sup>8</sup>

Although the Army was forced to scale back its Defender-Europe 20 exercise, which was planned to be the Army's largest exercise in Europe in 25 years, DEFENDER 21 was executed in 2021 from March to June and was more extensive than the prior year's planned event.<sup>9</sup>

**A Strong Force Showing Its Age**. The U.S. Army is currently the world's most powerful army, but it is also too small to meet even the

modest requirements of the 2018 National Defense Strategy (NDS), much less the standard of being able to handle two major regional contingencies simultaneously, which most experts believe is necessary. It also is not sufficiently modern.

Even though the conflict in Iraq has largely ended and the military is withdrawing from Afghanistan, the 15 years from 2001 to 2016, when the Army was focused single-mindedly on counterinsurgency and winning those conflicts, completely distracted the service from focusing on modernizing the key combat capabilities that it will need for near-peer competition. As a consequence, the Army's last major modernization occurred in the 1980s. As Army Chief of Staff General James McConville stated in March 2021, "[W]e 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."<sup>10</sup>

The Army's ability to recover was further constrained by a period of fiscal austerity that began with the Budget Control Act (BCA) of 2011.<sup>11</sup> The inability to fund everything that was needed led to difficult across-the-board tradeoffs in equipment, manpower, and operations accounts. Budget pressure drove DOD in January 2014 to shrink the Army's Active component end strength from more than 500,000 to 420,000—the smallest Army in modern U.S. history.<sup>12</sup> 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, although 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.<sup>13</sup>

A Change in Strategic Direction? It is unclear what direction the Biden Administration's National Security or National Defense strategies will take. The Administration's Interim National Security Guidance provides little insight into its thinking with respect to national defense and does not even mention

## Army Budget Hit by Inflation and Cuts

The Army's total obligation authority (TOA) is declining in actual dollars, but because of inflation, those declines also result in an additional loss in buying power. From 2018 to 2022, those losses have totaled \$39 billion.



**SOURCE:** Major General Paul A. Chamberlain, Director, Army Budget, "Army Fiscal Year 2022 Budget Overview," May 28, 2021, p. 4, https://www.asafm.army.mil/Portals/72/Documents/BudgetMaterial/2022/pbr/FY22\_PB\_brief\_28MAY21.pdf (accessed July 23, 2021).



the Army or any other service.<sup>14</sup> The Trump Administration's NDS made "long-term strategic competitions" with China and Russia the "principal priorities" but also stated that DOD would "sustain its efforts" to counter the challenges posed by Iran, North Korea, and terrorism—threats where land power has great or even predominant utility.<sup>15</sup>

The 2018 NDS included the relatively modest goal of "defeating aggression by a major power; deterring opportunistic aggression elsewhere; and disrupting imminent terrorist and WMD threats."<sup>16</sup> Some, however, question whether even that goal is achievable. According to Representative Adam Smith (D–WA), the influential chairman of the House Armed Services Committee, for example, "We should get off of this idea that we have to win a war in Asia, with China, what we have to do from a national security perspective, from a military perspective, is we have to be strong enough to deter the worst of China's behavior."<sup>17</sup> Exactly what the "worst" of China's behavior would be and what it would take to deter it remained undefined, but a change in U.S. strategy is clearly possible. **Consequences of the Loss in Buying Power.** Despite relatively broad agreement that the DOD budget needed real growth of 3 percent through 5 percent to avoid a strategybudget mismatch,<sup>18</sup> the defense budget topline did not meet that target in FY 2019 and still has not done so.

Of all the services, the Army has fared the worst in terms of resources. Its funding levels plateaued with the FY 2018 budget and since then have declined. The Army received \$179 billion in FY 2018, \$181 billion in FY 2019, \$186 billion in FY 2020, and \$177 billion in FY 2021 and requested \$173 billion for FY 2022. Because of the inexorable annual bite of inflation and the decline in budget authority, the Army budget for FY 2022 represents a net loss of about 9 percent in buying power, or \$16 billion, since FY 2018.<sup>19</sup>

Summarizing the Army budget at a recent hearing, Acting Secretary of the Army John Whitley stated, "I think there is a lot of risk in the budget, congressman.... The Army's budget has actually been flat for the last two to three years."<sup>20</sup> General McConville's assessment is somewhat more colorful: In the past two years, the Army has "picked the fruit" from the tree trying to find ways to make tough budget choices. Now, as the service approaches FY 2022, "[t]here's no more fruit in that tree."<sup>21</sup>

#### 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 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.<sup>22</sup> BCTs range between 4,400 and 4,700 soldiers in size.<sup>23</sup> There are three types of BCTs: Infantry, Armored, and Stryker. Each of these formations at its core has three maneuver battalions enabled by multiple other units such as artillery, engineers, reconnaissance, logistics, and signal units.<sup>24</sup>

The best 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.

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."<sup>25</sup> 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.<sup>26</sup> Subsequent reductions reduced the number of Regular Army BCTs from 33 to 31, where they remain today.

When President Trump and Congress reversed the drawdown in end strength and authorized growth starting 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 is to fill operational units to 105 percent of their authorized manning.<sup>27</sup>

**Combat Aviation Brigades.** The Regular Army also has a separate air component organized into Combat Aviation Brigades (CABs), which can operate independently. 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 has also been reduced. In May 2015, the Army deactivated one of its 12 CABs, leaving only 11 in the Regular Army.<sup>28</sup>

**Generating Force.** CABs and Stryker, Infantry, and Armored BCTs make up the Army's main combat forces, but they obviously

### **Major Army Combat Formations**

Brigade Combat Teams	Regular Army	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

		Army National		
Aviation Brigades	Regular Army	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) 2022 Budget Estimates, Volume 1, Operation and Maintenance, Army, Justification of Estimates*, May 2021, pp. 65 and 128, https://www.asafm.army.mil/Portals/72/Documents/BudgetMaterial/2022/ Base%20Budget/Operation%20and%20Maintenance/OMA\_VOL\_1\_FY\_2022\_PB.pdf (accessed July 23, 2021).

 U.S. Department of the Army, Department of the Army Fiscal Year (FY) 2022 Budget Estimates, Volume 1, Operation and Maintenance, Army National Guard, Justification Book, May 2021, pp. 44 and 101, https://www.asafm.army.mil/Portals/72/Documents/ BudgetMaterial/2022/ Base%20Budget/Operation%20and%20Maintenance/OMNG\_VOL\_1\_FY\_2022\_PB.pdf (accessed July 23, 2021).

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do not make up the entirety of the Army. A so-called Generating Force of 87,015 Regular Army troops provides 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.<sup>29</sup> The troops in this Generating Force are the seed corn of the Army, which therefore endeavors to insulate them from drawdown and restructuring proposals in order to "retain a slightly more senior force in the Active Army to allow growth if needed."<sup>30</sup>

**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,<sup>31</sup> 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. Special operations forces such as the 75th Ranger Regiment, six Special Forces Groups, and the 160th Special Operations Aviation Regiment are also included in this category.

**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, which outlines how the Army views the future.<sup>32</sup>

In April 2020, the Army announced that it planned to modify its force structure for MDO under the designation AimPoint Force Structure Initiative. Its objective is to produce an "MDO-capable force" by 2028 and an "MDOready force" by 2035.33 As part of this initiative, the Army reactivated V Corps Headquarters on October 16, 2020, to provide operational planning, mission command, and oversight of rotational forces in Europe.34 The Army has also announced plans to create five Multi-Domain Task Forces (MDTFs). One MDTF is currently stationed at Joint Base Lewis-McChord in Washington State. Another will be located in Germany. Of the remaining three MDTFs, one will be in the Indo-Pacific, one will be in the Arctic, and the fifth will likely be maintained in the U.S. to be available for global response. 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.35

To relieve the stress on the use of BCTs for advisory missions, the Army has activated six Security Force Assistance Brigades (SFABs). These units, composed of about 800 soldiers each, 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.<sup>36</sup>

**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. As of September 30, 2021, the Army had an authorized total end strength of 1,012,200 soldiers:

- 485,900 in the Regular Army,
- 189,800 in the Army Reserve, and
- 336,500 in the Army National Guard (ARNG).<sup>37</sup>

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."<sup>38</sup> In an earlier discussion with reporters, Mc-Conville 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].... So, we're sitting right now at 485,000."<sup>39</sup>

The Army's plan to increase the size of the Regular Army force has recently been put on hold because of budget cuts. The Army had planned to raise the Regular Army incrementally to above 500,000 by adding approximately 2,000 soldiers per year.<sup>40</sup> 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, McConville has reported that the Army will have to hold its end strength constant to save money.<sup>41</sup>

Overall end strength dictates how many BCTs the Army can form, and by holding end strength constant, it is very unlikely that the service will be able to add any new maneuver formations to the mix. 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 Michael McCord, are now senior DOD officials. Among its findings, the commission unanimously reported that the NDS

### Army Formations: Time Deployed vs. Time at Home Station

Even with a reduced presence in Iraq and Afghanistan, certain Army formations continue to deploy globally at a high tempo. The table below shows the ratio of time deployed to time at home station for three select Army formations. Typically, if the ratio drops below 1-to-2, a formation is spending more time deployed than is recommended, and this pace will cause long-term challenges.

	Unit Type	Ratio of Time Deployed to Time at Home Station	
	Patriot Battalions	1 to 1.23	
	IBCTs (Regular Army)	1 to 1.86	
	Division Headquarters (Regular Army)	1 to 2.25	
NOTE: Data ai SOURCE: Ema	re current as of May 20, 2021. ail from Headquarters, Department of the Army, G-3/5/7 Office to t	he author, May 25, 2021.	ritage.org

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."<sup>42</sup>

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-thanrequired Army end strength has resulted in a higher-than-desired level of OPTEMPO. As of May 2021, despite a reduction in unit deployments to Iraq and Afghanistan, Army units continued to experience sustained demand. Some of the units with the highest OPTEMPOs (measured in boots on the ground/dwell ratios) are shown in Table 3.<sup>43</sup>

**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.<sup>44</sup> 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 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) that rotate to and from Europe and Korea. Rather than relying on forward-stationed BCTs, the Army rotates ABCTs to Europe and Korea on a "heel-to-toe" basis so that there is never a gap. 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 and remain at a high state of readiness throughout their typically 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.<sup>45</sup> 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.

To mitigate risk and add to the number of ready BCTs, the Army has initiated a program, ARNG 4.0, to resource select Army National Guard BCTs with additional training days, moving from the standard number of 39 to as many as 63 per year to increase readiness levels. To apply these resources, the National Guard has implemented a multi-year 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. Because of budget cuts, however, the FY 2022 budget reduces National Guard CTC rotations back down to two.46

Despite the increase in the number of training days, the training goal for National Guard BCTs is to achieve a company level rather than a brigade level of proficiency, which means that additional training time would be required before the unit could be deployed.

#### 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, [and] 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.<sup>47</sup>

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."<sup>48</sup>

**Equipment Losing Its Competitive Ad**vantage. 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. Due to the restrictions of the Intermediate Range Nuclear Forces Treaty and other factors, it had a maximum range of 300 kilometers. Meanwhile, both China and Russia have much more substantial inventories of conventional, precision, groundlaunched missiles and rockets. China has nine major ground-launched missile systems and more than 425 launchers. These capable systems can range from 600 km (DF-11A and DF-15) to 4,000 km (DF-26).49 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 km (SS-21) to 2,500 km (SSC-8).50 The U.S. hopes to field a new precision strike missile by 2023, but for now, that system remains a plan, not a capability.

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 2021, Russia is reportedly beginning to

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

GROUND-LAUNCHED CONVENTIONAL-CAPABLE PRECISION MISSILE SYSTEMS



#### SOURCES:

- Center for Strategic and International Studies, China Power Project, "How Are China's Land-based Conventional Missile Forces Evolving?" updated May 12, 2021, https://chinapower.csis.org/conventional-missiles/ (accessed July 23, 2021).
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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. The M-1 is a great tank, but the decisive advantage that the U.S. once enjoyed in tank warfare is disappearing.<sup>51</sup>

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.<sup>52</sup> 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 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."<sup>53</sup> The Abrams Main Battle Tank (most recent version in production: M1A2 SEPv3, first unit equipped in FY 2020)<sup>54</sup> and Bradley Fighting Vehicle (most recent version: M2A4, first unit equipped in FY 2020) are the primary combat platforms in Armored BCTs. There are two modernization levels of these two armored combat vehicles within the Army. (See Chart 6).

The M-1 tank and Bradley first entered service in 1980 and 1981, respectively. There are 87 M-1 Abrams tanks and 152 Bradley Fighting Vehicle variants in an ABCT.<sup>55</sup> 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 re-released a new RFP for what it calls a "concept design" in December 2020. As many as five proposals were scheduled to be awarded in June 2021 to companies to refine their designs,<sup>56</sup> and "[t]he Army now plans for the first unit to be equipped [with the OMFV] in the fourth quarter of FY2028."<sup>57</sup>

**New Tank?** A potential 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.<sup>58</sup>

**Armored Multi-Purpose Vehicle** (AMPV). Also part of an ABCT, the venerable M113 multi-purpose personnel carrier fills multiple roles like mortar carrier and ambulance. It entered service in 1960 and was scheduled to be replaced by the new Armored Multi-Purpose Vehicle (AMPV), which after delays has begun product qualification testing. As of May 20, 2021, BAE had delivered 31 AMPVs to the Army.<sup>59</sup> First fieldings for this system are now expected during the second quarter of FY 2023.<sup>60</sup> Apparently because of budget cuts, no procurement of the AMPV is proposed in the Army's FY 2022 budget request. It is unclear what the Army plans for this platform or whether its stated objective of 2,897 AMPVs will ever be reached.<sup>61</sup>

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 their rapid strategic deployment and mobility.62 Stryker BCTs are equipped with approximately 321 eight-wheeled Stryker vehicles.63 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.64 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.65 The Army is also integrating Javelin anti-tank missiles on the Stryker platform.<sup>66</sup>

**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."<sup>67</sup> 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.



### **Army Armored Combat Vehicle Modernization**

**Joint Light Tactical Vehicle (JLTV).** The Joint Light Tactical Vehicle (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 plans to procure 49,099 JLTVs over the life of the program, replacing about 50 percent of the current HMMWV fleet. As of May 20, 2021, the Army had fielded 4,543 JLTVs.<sup>68</sup>

Requested FY 2022 funding of \$574.5 million would support procurement of 1,203 JLT-Vs and 1,541 trailers. This reflects a continued reduction in funding for this program (\$884 million was enacted for FY 2021) and illustrates the extreme budget pressures the Army is facing. Considering the 8,621 JLTVs the Army has already procured<sup>69</sup> and procurement at a rate of 1,203 vehicles per year starting in FY 2022, the Army will not reach its acquisition objective for the JLTV until 2055, forcing continued reliance on aging HMMWVs, which began fielding in 1983.<sup>70</sup>

**Mobile Protected Firepower (MPF).** The Army is developing an armored gun system called Mobile Protected Firepower (MPF) 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, which will continue through June 2021. The first units are expected to receive MPF in FY 2025.<sup>71</sup>

**Ground Mobility Vehicle (GMV).** Airborne BCTs are the first IBCTs to receive a new platform to increase their speed and mobility. The Ground Mobility Vehicle (GMV) provides enhanced tactical mobility for an IBCT nine-soldier infantry squad with their associated equipment. GM Defense was selected for the production contract in June 2020. The Army has approved a procurement objective of 11 IBCT sets at 59 vehicles per IBCT (649 vehicles in total), to be completed by FY 2028. Ultimately, the Army will buy as many as 2,065 of these vehicles.<sup>72</sup> As of May 20, 2021, 168 GMVs had been fielded to Army units.<sup>73</sup>

**Combat Aviation Brigade.** Combat Aviation Brigades 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 2022 budget request dramatically curtails the number of aircraft to be procured. This 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 2022 procurement request for the UH-60M is \$630.2 million, which would support the procurement of 24 aircraft (18 less than the 42 requested in FY 2021).<sup>74</sup> The most modernized variant, the UH/HH-60M, accounts for approximately 50 percent of the Army's H-60 medium helicopter fleet.<sup>75</sup>

**CH-47.** The CH-47F Chinook, a rebuilt variant of the Army's CH-47D heavy-lift helicopter, has an acquisition objective of 550 aircraft and, with no replacement on the horizon, is expected to remain the Army's heavy-lift helicopter for the next several decades. The FY 2022 budget request of \$145.2 million would support the procurement of six aircraft, all of which would be the MH-47G special operations model.<sup>76</sup> The most recent model, the CH-47F, accounts for 89 percent of the 518 CH-47 helicopters currently in service.<sup>77</sup>

**AH-64.** The AH-64E heavy attack helicopter has an acquisition objective of 791 aircraft, which is being met by the building of new aircraft and remanufacturing of older AH-64 models. The FY 2022 procurement request of \$504.1 million would support the purchase of 30 AH-64E aircraft,<sup>78</sup> 22 less than the 52 produced in FY 2021. This would likely terminate the AH-64E new-build line. Of the 740 AH-64 helicopters in service, 53 percent are the most recent variant, the AH-64E.<sup>79</sup>

Overall, the Army's equipment inventory, while increasingly dated, is maintained well. Despite high usage in Afghanistan and Iraq, most Army vehicles 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, for example, "the Army envisions [the M-1 Abrams Tank, the M-2/M-3 Bradley Fighting Vehicle (BFV), and the M-1126 Stryker Combat Vehicle] in service with Active and National Guard forces beyond FY 2028.<sup>780</sup>

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. Chairman of the Joint Chiefs of Staff General Mark 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...."<sup>81</sup> 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.** The Army established a new four-star headquarters, Army Futures Command, to manage modernization and eight cross-functional teams (CFTs) to improve the management of its top modernization priorities.<sup>82</sup> Army leadership—in particular the Under Secretary of the Army and the Vice Chief of Staff of the Army—devote an extraordinary amount of time to equipment modernization issues, but only 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 Vehicle, Future Vertical Lift, the Army Network, Air and Missile Defense, and Soldier Lethality."<sup>83</sup>

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 usually 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 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."84

As DOD budget challenges for nuclear deterrence programs, rising personnel costs, health care, and the need to invest in programs to respond to China's increasingly aggressive activities 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, which needed a reboot. Limited numbers of Stryker vehicle-mounted Maneuver Short Range Air Defense (M-SHORAD) systems have been delivered to Europe.85 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 for delivery in FY 2023, but their success will depend on sustained funding.86

#### Readiness

**BCT Readiness Reduced.** Over the past four years, the Army has made 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. In FY 2021, however, BCT readiness declined, and if enacted, the FY 2022 budget's dramatic cuts in funding for Army training could lead to even bigger declines in the future.

As of May 20, 2021, the Army reported that "58 percent of Active Component Brigade Combat Teams are at the highest levels of tactical readiness," eight percentage points below their goal and 16 percentage points below last year's reported level. This means that 18 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.<sup>87</sup> Last year's *Index* reported that 21 Regular Army BCTs were at the highest levels of readiness.

There has also been an apparent drop in readiness among National Guard BCTs from FY 2020 to FY 2021. Last year's *Index* estimated that four to five National Guard BCTs were at the highest levels of readiness. Now the Army reports that *no* National Guard BCTs are at the highest levels of readiness.<sup>88</sup>

Of the Army's 11 Combat Aviation Brigades, eight (73 percent) are at the highest levels of readiness. This is relatively healthy.<sup>89</sup>

**Training Resources Slashed.** In the FY 2022 budget request, funding for training activities has been reduced significantly. When measuring training resourcing, the Army uses full-spectrum training miles (FSTMs) for Brigade Combat Teams, representing 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), reflecting the number of hours that aviation crews can fly their helicopters per month.

According to the Army's budget justification exhibits, "[t]he FY 2022 budget funds 1,109 Operating Tempo Full Spectrum Training Miles and 10.2 flying hours per crew, per month" to meet "required training readiness levels."<sup>90</sup> The FY 2022 proposed FSTM is significantly

### **Army Readiness: Brigade Combat Teams**

Based on historical force requirements, The Heritage Foundation assesses that the Army needs a total of 50 Brigade Combat Teams (BCTs). Although the Army currently has 58 BCTs, only the 31 Regular Army BCTs have the necessary readiness to meet near-term and mid-term operation plan requirements.



\* Includes four Army National Guard BCTs. **SOURCE:** Email from Headquarters, Department of the Army, G-3/5/7 Office to the author, May 25, 2021.

heritage.org

lower (30 percent) than resourced levels of 1,598 miles and lower (5 percent) than the 10.8 flying hours enacted in the FY 2021 budget.

**Training Level Goals Reduced.** The Army is trying to cope with these reduced training resources by shifting training to lower echelons, which is less expensive. Its new strategy "focuses resources on squad, platoon and company level training to achieve highly trained companies."<sup>91</sup> The FY 2022 budget justification books omit the Unit Proficiency Level Goal, which for years has been BCT; it is likely now battalion or company. In addition, the Army's major exercise, the DEFENDER series, is being cut back dramatically by \$339 million in FY 2022, shifting to an exercise in Europe in even years and an exercise in the Pacific in odd years.<sup>92</sup>

**CTC Rotations Chopped.** The Army uses Combat Training Centers (CTCs) 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."<sup>93</sup> The FY 2022 budget request reduces CTC rotations by 34 percent: For FY 2022, the Army requested resources for 17 CTC rotations (15 Regular Army and two National Guard); in FY 2021, the Army was resourced for 26 rotations (21 Regular Army and five National Guard).<sup>94</sup>

**New Readiness Model.** The Army is transitioning 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."<sup>95</sup> ReARMM reportedly will feature six-month cycles to field new equipment and allocate units to specific theaters. The Army intends to shift to this new model on October 1, 2021.<sup>96</sup>

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, funding cuts in the FY 2022 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 Freedoman 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.<sup>97</sup> 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 four Army National Guard BCTs in the overall

count of available BCTs. Because the Army reports that no Army National Guard BCTs are 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 2020.

- **Two-MRC Benchmark:** 50 Brigade Combat Teams.
- Actual FY2021 Level: 31 Regular Army Brigade Combat Teams.

The Army's current BCT capacity equals 62 percent of the two-MRC benchmark and thus is 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." Despite modest progress with the JLTV and AMPV, 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, new Army equipment programs remain in the development phase and in most cases are two to three years from entering procurement phases. FY 2022 requested funding levels would lead to reductions in numerous equipping programs: helicopter modernization, AMPV, JLTV, HEMMT, and others. The result would be an Army that is aging faster than it is modernizing.

#### **Readiness Score: Very Strong**

The Army reports that 58 percent (18) of its 31 Regular Army BCTs are at the highest state of readiness.<sup>98</sup> No National Guard BCTs are at

those levels of readiness. The Army's internal requirement for Regular Army BCT readiness is 66 percent, or 20.5 BCTs.<sup>99</sup> Using the assessment methods of this *Index*, this results in a percentage of service requirement of 87 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 2021 *Index*, which also rated the Army as "marginal" overall.

U.S.	Military	Power:	Army	

	VERY WEAK	WEAK	MARGINAL	STRONG	VERY STRONG
Capacity		<b>~</b>			
Capability			<ul> <li>Image: A second s</li></ul>		
Readiness					✓
OVERALL			<ul> <li>Image: A second s</li></ul>		



### Main Battle Tank

PLATFORM	Age Score	Capability Score	REPLACEMENT PROGRAM	Size Score	Health Score
M1A1/2 Abrams			Decisive Lethality Platform (DLP)		
Inventory: <b>678/1619</b> Fleet age: <b>30.5/13.5</b> Date: <b>1980/1993</b>			The DPL program is intended to replace the tank. This program is part of the Next Gene	Abrams ration Cor	nbat
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	Vehicle (NGCV) program, which is number Army's "Big Six" modernization priorities. replacement for the Abrams tank could be 2030.	two amon The soone introduced	g the st a d is

# **Infantry Fighting Vehicle**

PLATFORM	Age Score	Capability Score	REPLACEMENT PROGRAM	Size Score	Health Score
M2 Bradley			Optionally Manned Fighting Vehicle (OMFV)		
Inventory: <b>4,006</b> Fleet age: <b>20</b> Date: <b>1981</b> The Bradley is a tracked vehicle meant to transport infantry and provide covering fire. The Bradley complements the Abrams tank in armored BCTs. The Bradley underwent a remanufacture program to extend its life to 2045.	3	3	In March 2019, the Army issued a request fo build prototypes of the OMFV, but it then di and cancelled the solicitation in January 20 now redefining the requirements and intend designs from companies in mid to late 2020 has likely slipped to first fieldings in 2028. T is part of the Next Generation Combat Vehic program, which is number two among the A modernization priorities	r proposal d an abou 20. The Ar Is to seek ). The prog his progra cle (NGCV Army's "Big	ls to t-face my is digital gram m ) g Six"

# **Armored Fighting Vehicle**

PLATFORM	Age Score	Capability Score	REPLACEMENT PROGRAM	Size Score	Health Score
Stryker			None		
Inventory: <b>4,859</b> Fleet age: <b>10</b> Date: <b>2001</b>					
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 hurdles. The original Stryker is being replaced with a double-v hull (DVH) configuration 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			

NOTE: See page 379 for details on fleet ages, dates, and procurement spending.

### **Armored Personnel Carrier**

PLATFORM	Age Score	Capability Score	REPLACE	MENT PROGRAM		Size Score	Health Score
M113 Armored Personnel Carrier			Armored	Multi-Purpose Ve	hicle (AMPV)	_	
Inventory: <b>4,339</b> Fleet age: <b>36</b> Date: <b>1960</b>			Timeline:	2018-TBD		2	3
The tracked M113 serves in a supporting role for armored BCTs and in units above brigade level. The APC is being replaced by the Armored Multi Purpose Vehicle (AMPV). Plans are to use the	0	2	The AMPV has been adapted from the Bradley Fighting Vehicle which largely allowed the program to bypass th technology development phase. The fleet will consist o variants. The first unit is set to be equipped at the end		ng the of five d of 2021.		
platform until 2045.			PROCURE	MENT	SPENDING (	\$ millions)	
			474	2,391	\$2,666	\$11,126	

# **Light Wheeled Vehicle**

PLATFORM	Age Score	Capability Score	REPLACEM	ENT PROGRAM	I	Size Score	Health Score
HMMWV			Joint Light	Tactical Vehicle	e (JLTV)		
Inventory: <b>99,800</b> Fleet age: <b>18</b> Date: <b>1985</b>			Timeline: 20	15-2036		3	3
The HMMWV is used to transport troops and for a variety of other purposes (for example, as ambulances). Its expected life span is 15 years. A portion of the HMMWV fleet will be replaced by the Joint Light Tactical Vehicle (JLTV).	2	0	The JLTV vehicle program replaces some of the Army's HMMWVs and provides improved protection, reliability survivability of vehicles. This is a joint program with the USMC. In June 2019, the Army approved the JLTV for f production. Production is underway. Current budget sl have forced the Army to reduce procurement quantitie		r's ty, and he full-rate shortfalls ies.		
			PROCOREP		SPENDING (	p IIIIIIOIIS)	
			13,438	35,661	\$6,492	\$19,219	

NOTE: See page 379 for details on fleet ages, dates, timelines, and procurement spending.





# **Attack Helicopter**

PLATFORM	Age Score	Capability Score	REPLACEMENT PROGRAM	Size Score	Health Score
AH-64 D Apache Inventory: 381 Fleet age: 14.5 Date: 1997			AH-64E Reman Timeline: 2010-TBD	3	5
The Apache is found in Combat Aviation Brigades and is the Army's attack helicopter. It can destroy armor, personnel, and material targets. Its expected life cycle is approximately 20 years.	2	3	The AH-64E Reman (short for remanufact program to remanufacture older Apache h the more advanced AH-64E version. The A more modern and interoperable systems a to carry modern munitions, including the PROCUREMENT* 431 189 SPENDING*	ured) is a helicopters AH-64E w and will be IAGM miss ( <i>\$ millions</i> , 9 \$3	s into ill have a able sile. )
AH-64E Inventory: 351 Fleet age: 4 Date: 2012			AH-64E New Build Timeline: 2010-2027	3	6
The AH-64E variant is a remanufactured version with substantial upgrades in power plant, avionics, communications, and weapons capabilities. Its expected life cycle is approximately 20 years.	6	6	The AH-64E New Build program produces n not rebuilt, Apaches. The program is meant and sustain the current Apache inventory. Th has more modern and interoperable system to carry modern munitions, including the JA PROCUREMENT* SPENDING* 79 2 \$	ew-build, to modern ne AH-64E s and is ab GM missile (\$ millions, 2,404	iize le 2.

\* Additional procurement expected.

NOTE: See page 379 for details on fleet ages, dates, timelines, and procurement spending.





# **Medium Lift**

PLATFORM	Age Score	Capability Score	REPLACEMENT PROGRAM	Size Score	Health Score
UH-60A Black Hawk Inventory: 157 Fleet age: 36.5 Date: 1978			UH-60M Black Hawk Timeline: 2004-TBD	3	5
The UH-60A is a utility helicopter that provides air assault and aeromedical evacuation and supports special operations. Its expected life span is approximately 25 years. This variant of the Black Hawk is now being replaced by the newer UH-60M variant.	0	2	The UH-60M, currently in production, is inimodernize and replace current Black Haw newer M-variant will improve the Black Ha lift by upgrading its rotor blades, engine, a <b>PROCUREMENT* SPENDING*</b>	tended to k inventor wk's rang ind compu- (\$ millions) 5 \$6	ries. The e and uters. )
UH-60L Black Hawk			UH-60V Black Hawk		
Inventory: <b>958</b> Fleet age: <b>14.5</b> Date: <b>1989</b> The UH-60L is the follow-on to the UH-60A helicopter. 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 at least until 2030.	3	3	Timeline: <b>2021–TBD</b> The Army plans to upgrade the older mod UH-60V configuration, which incorporates like the one on the UH-60M. This is an Arm measure because it is cheaper to make a U 60L than it is to buy a new UH-60M. PROCUREMENT* SPENDING* 3	el UH-60I ; a digital ny cost-sa JH-60V fro ( <i>\$ millions</i> N/A	4 L to the cockpit ving om a UH-
UH-60M Black Hawk					
Inventory: <b>1,070</b> Fleet age: <b>7.5</b> Date: <b>2005</b>					
The UH-60M is the follow-on to the UH- 60A helicopter. 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 at least until 2030.	5	4			

NOTE: See page 379 for details on fleet ages, dates, timelines, and procurement spending.





# **Heavy Lift**

PLATFORM	Age Score	Capability Score	REPLACEMENT PROGRAM	Size Score	Health Score	
CH-47F Chinook Inventory: 439 Fleet age: 9 Date: 2002			CH-47F Timeline: 2001-TBD	3	5	
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. Its expected life span is 35 years. The Army plans to use the CH-47F until the late 2030s.	6	6	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, 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 its maintenance requirements. Total procurement numbers include the MH-47G configuration for U.S. Special Operations Command.			
MH-47G			PROCUREMENT* SPENDING* (\$ millions)			
Inventory: <b>67</b> Fleet age: <b>9</b> Date: <b>2014</b> The MH-47G is a special operations variant of the CH-47 Chinook multi-role helicopter used in heavy-lift missions such as the transportation of troops, ammunition, vehicles, equipment, fuel, and supplies, as well as civil and humanitarian relief missions. The helicopter can conduct long-range missions at low levels and in adverse weather conditions, both during the day and at night.	6	6	1,183 172 \$1,369	\$25,517		

### Intelligence, Surveillance, and Reconnaissance (ISR)

PLATFORM	Age Score	Capability Score	REPLACEMENT PROGRAM	Size Score	Health Score	
MQ-1C Gray Eagle			MQ-1C Gray Eagle			
Inventory: <b>158</b> Fleet age: <b>4.5</b> Date: <b>2011</b>			Timeline: <b>2010–2022</b>	3	5	
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	The MQ-1C UAV provides Army reconnaissa surveillance, and target acquisition capabili is continuing to procure MQ-1Cs to replace PROCUREMENT SPENDING ( 277	nnaissance, apabilities. The Army place combat losses. IDING ( <i>\$ millions</i> ) \$6,140 \$1		

\* 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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