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March 30, 2023

Congressional Committees

## **Weapon System Sustainment: The Army and Air Force Conducted Reviews and the Army Identified Operating and Support Cost Growth**

The Department of Defense (DOD) spends tens of billions of dollars annually to sustain its weapon systems, from aircraft to ships to ground combat vehicles. These dollars are meant to ensure that these weapon systems are available to simultaneously support today’s military operations and maintain the capability to meet future defense requirements. Operating and support (O&S) costs historically account for approximately 70 percent of a weapon system’s total life-cycle cost, which is the cost to operate and sustain the system from initial operations through the end of its life. Included in the costs are repair parts, depot and field maintenance, contract services, engineering support, and personnel, among other things. Weapon systems are costly to sustain in part because they often incorporate a complex array of technical subsystems and components and need expensive repair parts and logistics support to meet required readiness levels.

In 2016, the National Defense Authorization Act for Fiscal Year 2017 included a provision requiring the military departments to conduct sustainment reviews for major weapon systems within 5 years of declaring initial operational capability and throughout their life cycle to assess their product-support strategy, performance, and O&S costs.<sup>1</sup>

In 2021, the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 amended this sustainment review provision by adding sustainment review reporting requirements for all covered systems (hereafter referred to in this report as weapon systems).<sup>2</sup> Specifically, the act amended the sustainment review provision to require each review to assess execution of the life-cycle sustainment plan of the weapon system and require that the secretary of each military department annually provide the sustainment reviews conducted on a weapon system to the congressional defense committees.<sup>3</sup>

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<sup>1</sup>Pub. L. No. 114-328, § 849(c) (2016) (codified, as amended, at 10 U.S.C. § 4323(a)). Initial operational capability is generally a point in time when some organizations in the force structure scheduled to receive a system have received it and have the ability to employ and maintain it.

<sup>2</sup>Pub. L. No. 116-283, § 802(c) (2021) (codified at 10 U.S.C. § 4323). The statute as amended also stated that the secretaries of the military departments shall conduct sustainment reviews within 5 years of declaring initial operational capability and every 5 years thereafter throughout the life cycle of the system. 10 U.S.C. § 4323(a). The statute defines a covered system as 1) a major defense acquisition program as defined in section 4201 of title 10, U.S. Code or 2) an acquisition program or project carried out using the rapid fielding or rapid prototyping acquisition pathway under section 804 of the National Defense Authorization Act for Fiscal Year 2016 that is estimated by the Secretary of Defense to have an eventual total expenditure of more than \$300 million for research, development, test, and evaluation or \$1.8 billion for procurement (dollar amounts are in fiscal year 1990 constant dollars). 10 U.S.C. § 4324(d)(5).

<sup>3</sup>Pub. L. No. 116-283, § 802(c) (2021) (codified, as amended, at 10 U.S.C. § 4323(b), (d)).

The act further amended the provision to require military departments, as part of the annual sustainment review submissions for any weapon system with critical O&S cost growth, to include either a remediation plan to reduce O&S costs or a certification by the secretary concerned that such cost growth is necessary to meet national security requirements.<sup>4</sup> The statute defines critical O&S cost growth as O&S cost growth of (a) at least 25 percent more than the estimate documented in the most recent independent cost estimate for the system; or (b) at least 50 percent more than the estimate documented in the original baseline cost estimate for the system.<sup>5</sup> For the purposes of this report, we refer to these categories of critical cost growth as “Category A” and “Category B.”

Section 802 of the act included a provision for us to review sustainment reviews conducted by DOD on an annual basis through 2025.<sup>6</sup> Specifically, the provision requires that we annually select 10 weapon systems for which a sustainment review has been submitted by the military departments to the congressional defense committees and assess the military departments’ efforts to quantify and address critical O&S cost growth for those systems.<sup>7</sup>

This report examines the extent to which the DOD: (1) developed weapon system sustainment reviews for fiscal year 2021 that quantified critical O&S cost growth and identified the causes of that growth; and (2) developed guidance for those sustainment reviews and identified any lessons learned from conducting them.

For objective one, we reviewed documentation including guidance for conducting sustainment reviews, the sustainment reviews submitted to the congressional defense committees in 2021, and memorandums and cost analysis briefs on the independent cost estimates developed to support these sustainment reviews. An independent cost estimate includes all costs of development, procurement, military construction, operations and support, disposal, and trained staff to operate, maintain, and support the system upon full operational deployment, without regard to funding source or management control.<sup>8</sup> We also interviewed officials from the offices of the Deputy Assistant Secretary of Defense for Materiel Readiness, Cost Assessment and Program Evaluation (CAPE), and each of the military departments, including officials from the weapon system program offices for those programs with critical O&S cost growth.

For objective two, we reviewed guidance and sustainment review submissions to the congressional defense committees to meet DOD’s fiscal year 2021 and 2022 sustainment

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<sup>4</sup>Pub. L. No. 116-283, § 802(c) (2021) (codified, as amended, at 10 U.S.C. § 4323(d)(3)).

<sup>5</sup>10 U.S.C. § 4323(e)(2). The statute defines a baseline cost estimate for a weapon system as the baseline description established with respect to a weapon system acquisition program before it enters system development and demonstration, or at program initiation, whichever occurs later, without adjustment or revision, with some exceptions. See 10 U.S.C. §§ 4323(e)(2)(B), 4214(d)(1).

<sup>6</sup>Pub. L. No. 116-283, § 802(d) (2021).

<sup>7</sup>We have separately reviewed aircraft and produced quick looks on those systems that include, among other things, analysis of historical O&S costs. For example, see GAO, *Weapon System Sustainment: Aircraft Mission Capable Goals Were Generally Not Met and Sustainment Costs Varied by Aircraft*, [GAO-23-106217](#) (Washington, D.C., Nov. 10, 2022). While there is some overlap of systems we reviewed in that work (e.g., the Air Force’s B-52 and B-1), the weapon systems covered by the military departments for their annual sustainment reviews include additional systems beyond those in our prior work (e.g., the Mine Resistant Ambush Protected (MRAP) MAXX Pro, Bradley Fighting Vehicle, and Guided Multiple Launch Rocket System).

<sup>8</sup>DOD Instruction 5000.73, *Cost Analysis Guidance and Procedures* (Mar. 13, 2020).

review requirement to document changes in how sustainment reviews were being conducted.<sup>9</sup> Also, we discussed with officials from each of the military departments and CAPE any lessons learned and changes made to their sustainment review processes since fiscal year 2021.

We conducted this performance audit from October 2022 through March 2023 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

### **The Army and Air Force Developed Reviews That Quantified O&S Costs, the Army Identified Two Systems with Cost Growth, and the Navy Did Not Submit Any Reviews**

In fiscal year 2021, the Army and Air Force conducted sustainment reviews of 13 weapon systems—four by the Army and nine by the Air Force—and submitted them to the congressional defense committees.<sup>10</sup> As a part of these sustainment reviews, the Army and Air Force developed independent cost estimates as required by the sustainment review statute.<sup>11</sup> The Army identified two weapon systems—CH-47F Block I and Guided Multiple Launch Rocket System—that experienced critical O&S cost growth. The Air Force was able to assess partially only one of its nine weapon systems for critical O&S cost growth. The Navy did not submit any sustainment reviews to Congress for fiscal year 2021. Rather, according to information provided by the Navy, it focused its efforts on developing guidance and schedules for its future reviews beginning in fiscal year 2022. The Office of the Under Secretary of Defense for Acquisition and Sustainment expressed concerns about the value of the Category B cost comparisons as discussed later in this report.

**Army.** The Army submitted to the congressional defense committees the sustainment reviews of four weapon systems: CH-47F Block I, Mine Resistant Ambush Protected (MRAP) MAXX Pro, Bradley Fighting Vehicle, and Guided Multiple Launch Rocket System. The Army determined that there was critical O&S cost growth for two programs—the CH-47F Block I and the Guided Multiple Launch Rocket System—and identified key causes of the growth (see figure 1).

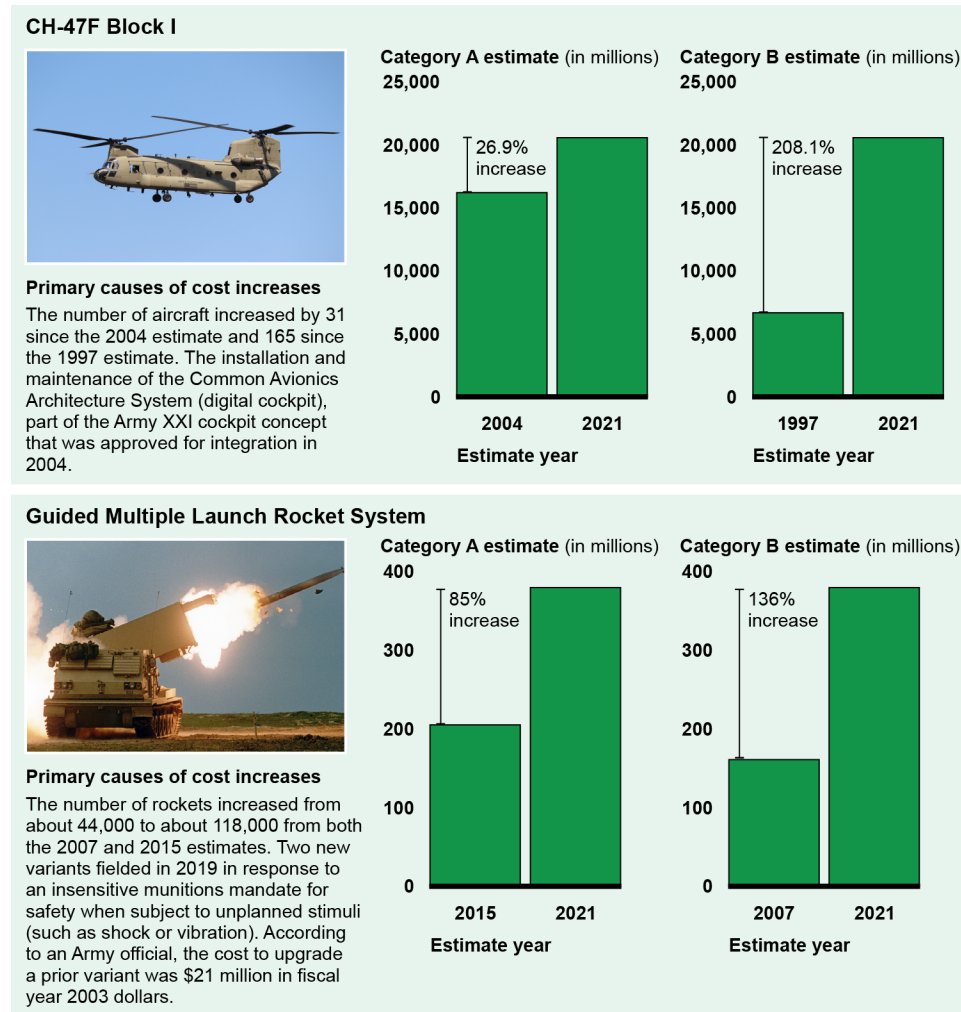
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<sup>9</sup>This report focuses on the fiscal year 2021 submissions. We also reviewed the fiscal year 2022 submissions to inform how lessons learned were applied in submissions after fiscal year 2021.

<sup>10</sup>See enclosure I for images of the 13 weapon systems.

<sup>11</sup>10 U.S.C. § 4323(b)(1).

**Figure 1: Army Weapon Systems with Critical Operating and Support (O&S) Cost Growth**



First, the number of CH-47F aircraft increased by 31 since the 2004 cost estimate was developed and by 165 since the 1997 baseline estimate.<sup>12</sup> The Army's submission also analyzed these costs per aircraft and determined the cost per aircraft increased by 18.4 percent from 2004 to 2021 and by 98.7 percent from 1997 to 2021. Second, the costs increased due to the installation and maintenance of the Common Avionics Architecture System (digital cockpit), part of the Army's XXI cockpit concept that was approved for integration in 2004, according to the Army's sustainment review submission and Army officials.

- **Guided Multiple Launch Rocket System:** The Army's sustainment review submission estimated the Category A cost increase to be 85 percent from \$204.8 million in 2015 to \$379.2 million in 2021. The Army's submission also estimated the Category B cost growth increase to be 136 percent from the baseline cost estimate of \$160.7 million developed in 2007 to \$379.2 million in the Army's 2021 independent cost estimate. The Army's sustainment review submission and Army officials attributed the cost increase primarily to two reasons: an increased number of rockets and an insensitive munitions requirement.

First, the number of rockets increased from about 44,000 to about 118,000 from both the 2007 and 2015 estimates to the 2021 estimate. Second, according to the Army's sustainment review submission and Army officials, to comply with an insensitive munitions requirement, the Army fielded two new variants in 2019.<sup>13</sup> According to Army officials, the original rocket had a steel-case variant that was not compliant with the requirements for safety when subject to unplanned stimuli (such as shock or vibration). An Army official confirmed that the cost of the upgrade, in fiscal year 2003 dollars, was \$21 million.

In its submission to the congressional defense committees, the Secretary of the Army certified that the critical O&S cost growth for these two weapon systems were necessary to meet national security requirements.

**Air Force.** The Air Force submitted to Congress sustainment reviews of nine weapon systems—B-1, B-2, B-52, C-130J, E-3, F-15E, F-16, KC-135, and MQ-9. However, our review of the Air Force's sustainment review submission found that the Air Force partially assessed only one of the nine weapon systems for critical cost growth.<sup>14</sup> According to its submission, the Air Force determined that the MQ-9 did not have critical cost growth in one of the two categories.<sup>15</sup>

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<sup>12</sup>The Army's Category B assessment compared the 2021 cost estimate against the 1997 baseline estimate.

<sup>13</sup>The Army submission and Army officials referenced section 2389 of title 10, U.S. Code. Section 2389, codified in 2001, requires the Secretary of Defense to ensure, to the extent practicable, that insensitive munitions under development or procurement are safe throughout development and fielding when subject to unplanned stimuli.

<sup>14</sup>We previously reported that sustainment reviews were not being completed for all aircraft. GAO, *Air Force and Navy Aviation: Actions Needed to Address Persistent Sustainment Risks*, [GAO-22-104533](#) (Washington, D.C.: June 15, 2022). Among the four recommendations we made to the Air Force and Navy, we recommended the Air Force should prioritize the completion of required sustainment reviews and update its planned schedule to complete the reviews in a timelier manner.

<sup>15</sup>According to the Air Force's submission, the MQ-9 sustainment review compared an independent cost estimate that was completed in 2012 to the independent cost estimate that was completed in 2021 for the sustainment review.

Sustainment review documentation stated that the MQ-9 program's baseline cost estimate no longer exists. As a result, the Air Force could not assess the cost growth in both categories.

For the other eight systems, according to Air Force officials, these systems either (1) did not have previously developed independent cost estimates due to the lack of requirements for such cost estimates at the time the system was developed and procured; or (2) they were unable to locate any independent cost estimates previously completed by CAPE using CAPE's database that stores independent cost estimates and other estimate artifacts.<sup>16</sup> As a result, for most of its systems, the Air Force was not able to compare any previously estimated costs to the independent cost estimates that it prepared in 2021 to determine if critical O&S cost growth had occurred. A CAPE official said that they were fairly certain that CAPE did not previously develop an independent cost estimate for any of the systems that the Air Force reviewed in fiscal year 2021.

**Navy.** The Navy did not submit to Congress or complete any sustainment reviews for any weapon systems in fiscal year 2021. A Navy official told us the Navy did not conduct sustainment reviews in fiscal year 2021 because they were updating the Navy's guidance directing sustainment reviews, including all the required elements for sustainment reviews in the statute; and establishing a schedule to review all required weapon systems on a five-year recurring basis. The Navy conducted sustainment reviews in fiscal year 2022, which we will report on in our forthcoming review of the military departments' fiscal year 2022 sustainment review submissions.<sup>17</sup>

**Office of the Under Secretary of Defense for Acquisition and Sustainment:** An official managing the sustainment reviews for the office stated that while there is value in the Category A cost comparison (i.e., the comparison against the most recent independent cost estimate), the Category B cost comparison (i.e., the comparison against the original baseline cost estimate for the system) does not offer value. First, the official told us that many systems do not have an O&S cost estimate that allows for the Category B cost comparison to be conducted. According to the official, even if a baseline cost estimate exists, many date before September 11, 2001, with very different cost assumptions on things like personnel costs, fuel costs, usage rates, the tempo of operations, and other factors. The official stated that they have recommended to Congress that this category be removed to focus on ensuring an effective Category A cost comparison for weapon systems.

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<sup>16</sup>A provision in the National Defense Authorization Act for Fiscal Year 2018 stated that the Director of CAPE is responsible for developing and maintaining a database on O&S estimates, supporting documentation, and actual O&S costs for major weapon systems. Pub. L. No. 115-91, § 836(a)(1) (2017) (codified, as amended, at 10 U.S.C. § 4325(c)(1)). CAPE's sustainment review guidance for fiscal years 2021 and 2022 stated that CAPE will host an online archive to record and store results of each sustainment review, and that each military department is responsible for submission of the sustainment review files to CAPE's Cost Assessment Data Enterprise library website. Director, Cost Assessment and Program Evaluation (CAPE) Memorandum, *Implementation of Cost Estimating, Document Collection, and Data Reporting for Sustainment Reviews* (June 14, 2021); Director, CAPE Memorandum, *Implementation of Cost Estimating, Document Collection, and Data Reporting for Fiscal Year 2022 Sustainment Reviews* (Mar. 22, 2022).

<sup>17</sup>The Navy submitted its fiscal year 2022 sustainment reviews to the congressional defense committees on October 5, 2022. Its submission included reviews on the following systems: Cooperative Engagement Capability, Tactical Tomahawk, KC-130J, Littoral Combat System, T45 Goshawk, Navy Multiband Terminal, F/A-18 E/F, and EA-18G.

## **DOD Developed Guidance for and Identified Lessons Learned from the Military Departments' Sustainment Reviews**

To support the military departments' efforts in conducting the sustainment reviews, both the Under Secretary of Defense for Acquisition and Sustainment and CAPE issued sustainment review guidance. First, in June 2021, the Under Secretary of Defense for Acquisition and Sustainment issued guidance for implementing the sustainment reviews including, among other things, instructions on determining critical O&S cost growth.<sup>18</sup>

Second, the Director of CAPE issued guidance in June 2021 for developing independent cost estimates for the fiscal year 2021 sustainment reviews.<sup>19</sup> In the guidance, the CAPE Director delegated, for all fiscal year 2021 sustainment reviews, the requirement for developing the independent cost estimate to the Director of the Cost Analysis Agency of the relevant military departments. However, the CAPE guidance stated that for all fiscal year 2022 sustainment reviews, the CAPE Director would make a determination when an independent cost estimate shall be conducted by CAPE and when the estimate shall be conducted by the Director of the Cost Analysis Agency of the relevant military department. Additionally, CAPE required that these cost agencies follow DOD guidance for developing independent cost estimates and established a process for reviewing the materials provided for the military departments' sustainment reviews, such as the independent cost estimates.<sup>20</sup> Specifically, the CAPE guidance stated that CAPE would review the materials provided for each sustainment review and submit a report of its findings to the secretary of each military department after all the planned sustainment reviews were completed in fiscal year 2021.

Because of this process, CAPE identified lessons learned from the military departments' efforts to develop independent cost estimates to support the sustainment reviews. CAPE's review of the Army's and Air Force's fiscal year 2021 independent cost estimates identified two areas for improvement that were broadly applicable across weapon systems. The first area related to capturing the details of all support costs to ensure the visibility of historical weapon system costs. The second area related to including any planned modification costs—i.e., efforts to modernize or upgrade a weapon system—in the independent cost estimate for a weapon system.<sup>21</sup> According to CAPE officials, CAPE began working with the Army and Air Force departments to ensure they address the issues CAPE identified in future sustainment reviews and associated independent cost estimates.

**Capture the details of all support costs associated with weapon systems.** CAPE identified that both the Air Force and Army independent cost estimates submitted as part of their fiscal year 2021 sustainment reviews needed to better capture the details of all support costs

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<sup>18</sup>Under Secretary of Defense for Acquisition and Sustainment Memorandum, *Implementation of Sustainment Reviews* (June 2, 2021).

<sup>19</sup>Director, Cost Assessment and Program Evaluation (CAPE) Memorandum, *Implementation of Cost Estimating, Document Collection, and Data Reporting for Sustainment Reviews* (June 14, 2021).

<sup>20</sup>The CAPE guidance required the cost agencies to conduct independent cost estimates in accordance with DOD Instruction 5000.73, *Cost Analysis Guidance and Procedures* (Mar. 13, 2020).

<sup>21</sup>A DOD official subsequently identified to us that, following additional discussion within DOD, the fiscal year 2021 sustainment review independent cost estimates included costs that complied with the sustainment review statute. Consequently, it is unclear at this time to what extent CAPE's second recommendation will be implemented for future submissions.

associated with the system. Officials from the Air Force and Army agreed this was a shortcoming and said they were working with CAPE to address the issue.

First, CAPE found that the Air Force's accounting system has limited detail on prime contractor costs, affecting its independent cost estimates. CAPE further noted that it plans to continue collaboration with the Air Force to improve cost data reports from both contractors and depots for fielded systems. Air Force officials agreed with CAPE that its accounting system has limited detail on prime contractor costs.

Second, CAPE also identified that a lack of available cost and non-cost data negatively affected the quality of the Army independent cost estimates prepared for the sustainment reviews. Included in CAPE's list of examples was the absence of cost reporting data for numerous contracts. CAPE further noted that the Army's independent cost estimates did not include an examination of the subject systems' cost and software data reporting plan(s) and data, as required by CAPE's June 2021 guidance. According to CAPE's findings memorandum to the Army, this examination is required to determine if the current submissions meet data reporting requirements, and to identify the degree to which additional cost and software data reporting plans should be developed and put into place on support contracts. Army officials told us that unmet cost and software data reporting requirements are typically due to the lack of notification of upcoming contract solicitations that meet a certain cost and software data reporting threshold. The officials said that the Army is using the CAPE-provided contract data template for its current sustainment reviews to identify and report on, as appropriate, support contracts that necessitate cost and software data reporting. Additionally, the Army is working to establish a business process that would result in the notification of upcoming contracts, agreements, or government efforts that meet this cost and software data reporting thresholds, according to the Army officials.

CAPE officials stated that, in response to the findings from the review of the 2021 sustainment reviews, the CAPE Director issued more specific guidance for the fiscal year 2022 sustainment reviews to address the need to better capture the details of support costs.<sup>22</sup> Specifically, the guidance stated that each sustainment review shall include an examination of the weapon system's cost and software data reporting plans, including a list of all contracts for which the total contract value exceeds \$20 million in then-year dollars. Also, CAPE provided a template for this reporting.

**Include any planned modification costs in the independent cost estimate.** CAPE identified concerns that the Air Force and the Army did not include potential modification costs for weapon systems in independent cost estimates. For example:

- *The Air Force B-52 independent cost estimate did not include costs associated with planned radar or engine upgrades.* CAPE's findings memorandum to the Air Force noted, without identifying a specific weapon system, that the Air Force's independent cost estimates in the future should include costs for the remainder of the life cycle of the program, including investment and modification costs. Air Force officials told us that the B-52 independent cost estimate did not include any investment or modification costs for a planned radar or engine upgrade because DOD considers these both to be separate and distinct acquisition programs.

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<sup>22</sup>Director, CAPE Memorandum, *Implementation of Cost Estimating, Document Collection, and Data Reporting for Fiscal Year 2022 Sustainment Reviews* (Mar. 22, 2022).



In addition, the Air Force officials pointed out that subsequent CAPE guidance focused on fielded modification programs being included, but they said that neither the radar modification nor engine upgrade had been fielded at that point. To avoid this type of confusion in the future, the Air Force officials stated that they plan to discuss with CAPE what, if any, modifications should be included in the independent cost estimate for each weapon system sustainment review when they begin to develop the cost estimate.

- *The Army's CH-47F Block I independent cost estimate did not include estimated costs for the Block II modification despite all Block I aircraft being planned for transition to Block II. CAPE's findings memorandum to the Army stated that the Army used inconsistent assumptions to prepare its independent cost estimate and its sustainment review submission to the congressional defense committees for the CH-47F. The CAPE assessment found that the independent cost estimate included only the Block I CH-47F variant with no cost estimate for the Army's modernization effort that plans to convert Block I aircraft to Block II aircraft.*

However, the Army's submission to the congressional defense committees stated that, pending Army decision in fiscal year 2021, the CH-47F strategy is to transition all Block I aircraft to Block II aircraft as the Block II reaches full production and deployment. An Army official told us that the CH-47F Block I and Block II programs are separate weapon systems and therefore will not be combined into one independent cost estimate. Instead, the official said that after the Army makes a final determination on the CH-47F Block II, a future CH-47F Block II sustainment review will provide the necessary cost estimate for this weapon system.<sup>23</sup>

Military department officials stated that they would work to ensure coordination with CAPE at the onset of independent cost estimate development to ensure agreement on the definition of the program covered by the sustainment review, and determine whether any modifications should be included. Further, CAPE's guidance for the fiscal year 2022 sustainment reviews directs that each sustainment review should include an analysis of each variant of a weapon system.<sup>24</sup>

## Agency Comments

We provided a draft of this report to DOD for comment. DOD did not provide formal written comments. DOD sent us technical comments, which we incorporated as appropriate.

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We are sending copies of this report to the appropriate congressional committees, the Secretary of Defense, and other interested parties. In addition, the report is available at no charge on the GAO website at <http://www.gao.gov>.

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<sup>23</sup>The sustainment review statute requires the military departments to conduct sustainment reviews of each covered weapon system no later than 5 years after declaration of initial operational capability and, after that, every 5 years throughout its life cycle. 10 U.S.C. § 4323.

<sup>24</sup>Director, CAPE Memorandum, *Implementation of Cost Estimating, Document Collection, and Data Reporting for Fiscal Year 2022 Sustainment Reviews* (Mar. 22, 2022).

If you or your staff have any questions about this report, please contact me at (202) 512-9627 or [maurerd@gao.gov](mailto:maurerd@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are John Bumgarner, Assistant Director; Susan Tindall, Analyst-in-Charge; Emily Biskup, David Jones, Janine Prybyla, Richard Powelson, Mike Silver, and Carter Stevens.

A handwritten signature in black ink that reads "Diana Maurer". The signature is written in a cursive, flowing style.

Diana Maurer  
Director, Defense Capabilities and Management

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# Enclosure I: Weapon Systems Included in the Department of Defense’s Fiscal Year 2021 Sustainment Reviews

## U.S. Army



CH-47F Block I



Mine Resistant Ambush Protected MAXX Pro



Bradley Fighting Vehicle



Guided Multiple Launch Rocket System

## U.S. Air Force



B-1B



B-2



B-52



C-130J



E-3



F-15E



F-16



KC-135



MQ-9

Source: (from left to right) U.S. Army/Scott T. Sturkol; U.S. Army/Sgt. David Bruce; U.S. Army/Staff Sgt. Charles Porter; Program Executive Office Missiles and Space; U.S. Air Force/Staff Sgt. Peter Reft; U.S. Air Force/Master Sgt. Russell Scalf; U.S. Air National Guard/Tech. Sgt. Daniel Gagnon; U.S. Air Force/Airman 1st Class Mercedes Porter; U.S. Air Force/Master Sgt. William Greer; U.S. Air National Guard/Airman 1st Class Tiffany A. Emery; U.S. Air Force/Airman 1st Class Matthew Seefeldt; U.S. Air Force/Senior Airman Alexandria Lee; U.S. Air National Guard/Airman Michelle Ulber. | GAO-23-106341

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