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FY2022 Defense Appropriations Act: Context and Selected Issues

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SUMMARY

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June 9, 2022

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FY2022 Defense Appropriations Act: Context and Selected Issues

The Department of Defense Appropriations Act, 2022, enacted as Division C of the Consolidated Appropriations Act, 2022 (H.R. 2471; P.L. 117-103), provided $719.6 billion in discretionary budget authority for the Department of Defense (DOD)—excluding supplemental funding—$22.5 billion (3.2%) more than the Administration's budget request. The annual defense appropriations bill typically funds all military-related activities of DOD except for the construction of facilities (covered by a separate appropriations bill) and accrual payments to the TRICARE medical insurance program for military retirees.

On July 15, 2021, the House Committee on Appropriations reported H.R. 4432, a FY2022 defense appropriations bill that would have provided 0.04% less than the budget request. The House took no action on that bill. On October 20, 2021, the majority (Democratic) caucus of the Senate Committee on Appropriations introduced S. 3023, a consolidated FY2022 appropriations bill that incorporated the defense appropriations bill as Division A, which would have provided 2.7% more than the request. Neither the Senate committee nor the Senate took any action on the bill.

Efforts to craft a compromise funding measure were in progress when Russia invaded Ukraine on February 24, 2022. Subsequently, Congress passed an omnibus FY2022 appropriation as an amended version of H.R. 2471. On March 9, 2022, the House approved by a vote of 361-69 the part of the bill that funds DOD among other agencies. The following day the Senate passed the bill by a vote of 68-31. President Joseph R. Biden signed the bill on March 15, 2022 (P.L. 117-103).

This report focuses on FY2022 regular defense appropriations (see table below). To date, Congress has also provided the following amounts in FY2022 supplemental defense appropriations: $895 million in the Disaster Relief Supplemental Appropriations Act, 2022 (Division B of P.L. 117-43); $2.2 billion in the Afghanistan Supplemental Appropriations Act, 2022 (Division C of P.L. 117-43); $4.312 billion in the Additional Afghanistan Supplemental Appropriations Act, 2022 (Division B of P.L. 117-70); $6.528 billion in Ukraine Supplemental Appropriations Act, 2022 (Division N of H.R. 2471; P.L. 117-103); and $20.104 billion in the Additional Ukraine Supplemental Appropriations Act, 2022 (H.R. 7691; P.L. 117-128).

FY2022 Department of Defense (DOD) Appropriations Act
(H.R. 4432; S. 3023, Division A, H.R. 2471, Division C)
(in billions of dollars)

Bill Title	FY2022 Budget Request	House Committee-reported H.R. 4432	Senate Committee Majority-drafted bill S. 3023, Div. A	FY2022 Defense Appropriations Enacted H.R. 2471, Div. C (P.L. 117-103)
Military Personnel	157.9	157.5	157.4	157.5
Operation and Maintenance	253.6	254.3	257.8	256.3
Procurement	132.5	134.3	141.5	144.9
Research & Development	112.0	110.4	116.2	119.2
Revolving and Management Funds	1.9	1.9	2.0	2.0
Defense Health Program and Other DOD Programs	37.9	39.0	38.7	39.8
Related Agencies	1.1	1.1	1.1	1.1
General Provisions	0.0	-1.4	1.7	-1.3
Total, Regular FY2022 DOD Discretionary Funding in the bill	**697.1**	**697.1**	**716.4**	**719.6**

Sources: CRS analysis of H.Rept. 117-88, House Appropriations Committee, *Report to Accompany Department of Defense Appropriations bill* (H.R. 4432), July 15, 2021, [table] pp. 382-397; *Explanatory Statement for the Department of Defense Appropriations Bill, Fiscal Year 2022*, committee print released by the Senate Appropriations Committee on Oct. 18, 2021, at https://www.appropriations.senate.gov/imo/media/doc/DEFRept_FINAL.PDF; and the joint explanatory statement to accompany the Department of Defense Appropriations Act, 2022 (Division C of P.L. 117-103), Part 1, at https://docs.house.gov/billsthisweek/20220307/BILLS-117RCP35-JES-DIVISION-C_Part1.pdf; and Part 2, at https://docs.house.gov/billsthisweek/20220307/BILLS-117RCP35-JES-DIVISION-C_Part2.pdf.

Notes: Tables in the draft Senate committee report on S. 3023 include, both in the amount requested for Military Personnel by the Administration and in the amount recommended by the committee, $9.34 billion appropriated as an accrual payment to the so-called TRICARE for Life fund, which provides medical insurance for military retirees. Since this payment is made automatically under a provision of permanent law (10 U.S.C. §§1111-1117), these funds are not provided by annual defense appropriations acts such as S. 3023, although this annual TRICARE for Life payment is designated as discretionary funding for purposes of the congressional budget process. Accordingly, the TRICARE for Life payment is not included in this table.
Totals may not sum due to rounding. Figures do not include FY2022 supplemental defense appropriations.

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Overview

The Department of Defense Appropriations Act, 2022, enacted as Division C of the Consolidated Appropriations Act, 2022 (H.R. 2471; P.L. 117-103), provided $719.6 billion in discretionary budget authority for the Department of Defense (DOD)—excluding supplemental funding—$22.5 billion (3.2%) more than the Administration's budget request. This annual bill provides discretionary funding for nearly all activities of the Department of Defense (DOD) except the construction of facilities and the provision of family housing for authorized military personnel.[1]

On July 15, 2021, the House Appropriations Committee reported H.R. 4432, a FY2022 defense appropriations bill that would have provided 0.04% less than the budget request. The House took no action on that bill. On October 20, 2021, the majority (Democratic) caucus of the Senate Appropriations Committee introduced S. 3023, a consolidated FY2022 appropriations bill that incorporated the defense appropriations bill as Division A, which would have provided 2.7% more than the request. The Senate committee took no action on the bill or on the associated explanatory statement, and the Senate took no action on the bill.[2]

Efforts to craft a compromise funding measure were in progress when Russia invaded Ukraine on February 24, 2022. Subsequently, Congress passed an omnibus FY2022 appropriation as an amended version of H.R. 2471. On March 9, 2022, the House approved by a vote of 361-69 the part of the bill that funds DOD among other agencies. The following day the Senate passed the bill by a vote of 68-31. President Biden signed the bill on March 15, 2022 (P.L. 117-103). See **Table 1**.

Table 1. FY2022 Department of Defense (DOD) Appropriations Act

(in billions of dollars)

Bill Title	FY2022 Budget Request	House Committee -reported H.R. 4432	Senate Committee Majority-drafted bill S. 3023, Div. A	FY2022 Defense Appropriations Enacted H.R. 2471 Div. C, Part A (P.L. 117-103)
Department of Defense, FY2022 Appropriations				
Military Personnel[a]	157.9	157.5	157.4	157.5
Operation and Maintenance	253.6	254.3	257.8	256.3
Procurement	132.5	134.3	141.5	144.9
Research & Development	112.0	110.4	116.2	119.2

[1] The annual Department of Defense Appropriations Act does not provide funding for DOD-related military construction and family housing programs, Army Corps of Engineers (Civil Works) programs, or the TRICARE for Life program of medical insurance for military retirees. Funding for military construction and family housing programs is provided in the Military Construction and Veterans Affairs, and Related Agencies Act. Funding for Army Corps of Engineers (Civil Works) programs is provided in the Energy and Water Development and Related Agencies Appropriations Act. Funding for TRICARE for Life is appropriated automatically each year (10 U.S.C. §§1111-1117).

[2] Besides the Defense Appropriations Act comprising Division A of S. 3023, the bill contained two additional divisions: Division B would appropriate $895.0 million to repair storm damage at Navy and Air Force bases; Division C would provide a net increase of $2.2 billion for overseas humanitarian aid. This report considers only funds appropriated by Division A, corresponding to the Administration's budget request falling within the traditional scope of the annual defense appropriations act.

Bill Title	FY2022 Budget Request	House Committee -reported H.R. 4432	Senate Committee Majority-drafted bill S. 3023, Div. A	FY2022 Defense Appropriations Enacted H.R. 2471 Div. C, Part A (P.L. 117-103)
Revolving and Management Funds	1.9	1.9	2.0	2.0
Defense Health Program and Other DOD Programs	37.9	39.0	38.7	39.8
Related Agencies[b]	1.1	1.1	1.1	1.1
General Provisions	0.3	-1.4	1.7	-1.3
Total Appropriated by H.R. 4432 and S. 3023, Division A	**697.4**	**697.1**	**716.4**	**719.6**
TRICARE for Life Accrual Payment	9.3	9.3	9.3	9.3
Total Defense Discretionary Appropriations Associated with H.R. 4432 and S. 3023, Division A.	**706.7**	**706.4**	**725.8**	**728.9**
Disaster Relief Supplemental (Division B of P.L. 117-43)	—	—	0.9	0.9
Afghanistan Supplemental Appropriations Act (Division C of P.L. 117-43)	—	—	2.2	2.2
Additional Afghanistan Supplemental Appropriations Act, 2022 (Division B of P.L. 117-70)	—	—	—	4.3
Grand Total	**706.7**	**706.4**	**728.9**	**736.3**

Sources: CRS analysis of H.Rept. 117-88, House Appropriations Committee, *Report to Accompany Department of Defense Appropriations bill* (H.R. 4432), July 15, 2021, [table] pp. 382-397; *Explanatory Statement for the Department of Defense Appropriations Bill, Fiscal Year 2022*, committee print released by the Senate Appropriations Committee on Oct. 18, 2021, at https://www.appropriations.senate.gov/imo/media/doc/DEFRept_FINAL.PDF; and the joint explanatory statement to accompany the Department of Defense Appropriations Act, 2022 (Division C of P.L. 117-103), Part 1, at https://docs.house.gov/billsthisweek/20220307/BILLS-117RCP35-JES-DIVISION-C_Part1.pdf; and Part 2, at https://docs.house.gov/billsthisweek/20220307/BILLS-117RCP35-JES-DIVISION-C_Part2.pdf.

Notes: Totals may not sum due to rounding. Figures do not include FY2022 supplemental defense appropriations for Ukraine.

a. Tables in the draft Senate committee report on S. 3023 include, both in the amount requested for Military Personnel by the Administration and in the amount recommended by the committee, $9.34 billion appropriated as an accrual payment to the so-called TRICARE for Life fund which provides medical insurance for military retirees. Since this payment is made automatically under a provision of permanent law (10 U.S.C. §§1111-1117), these funds are not provided by annual defense appropriations acts such as S. 3023, even though this annual TRICARE for Life payment is designated as discretionary funding for purposes of the congressional budget process.

b. These amounts go to the CIA retirement and disability fund and to the Intelligence Community Management Account.

Selected Increases

As enacted, the bill added funds to the amounts requested for certain programs that frequently have received congressional increases in previous defense funding bills. For example

- To fund a second Aegis destroyer (in addition to the one ship requested), the bill added $1.67 billion plus an additional $120 million for components to be used in the construction of an additional destroyer in the future. The bill also added $1.42 billion for components to be used in constructing an amphibious landing transport ship and three smaller amphibious landing support ships;
- To accelerate modernization of reserve and National Guard units, the bill added to the request a total of $3.59 billion;[3]
- To fund 378 science and technology (S&T) research programs,[4] the bill added to the request a total of $2.75 billion to the budget for research and development (R&D);
- For 52 medical R&D programs, it added a total of $1.8 billion; and
- To cover higher-than-budgeted fuel costs, it added a total of $1.49 billion.

Selected Offsets

The net budgetary effect of these and other additions to the budget request was offset, in part, by reductions to other aspects of the request.

Like S. 3023, which also emerged after the collapse of the U.S.-supported government in Afghanistan, the enacted legislation included none of the $3.3 billion that had been requested for DOD support of Afghan Security Forces. The enacted legislation also cut from the Army's Operation and Maintenance budget request $250 million that the service identified as being associated with its support of Afghan forces.[5]

Many of the other funding reductions in the bill reflect conferees' specific reservations about particular programs. The committees present other reductions as cost-cutting measures that either reflect fact-of-life changes or that for some other reason would have no adverse impact on the programs involved. The enacted legislation makes more than 500 reductions totaling more than $8.3 billion for which conferees cite explanations such as asserting that the request for a particular item or activity contains "excess growth" over the prior year's budget or that the request does not take into account some delay in contracting for a particular acquisition.[6]

As has long been typical in previous defense funding bills, this one reduces the amount of new budget authority required by rescinding $3.3 billion in unspent appropriations for prior fiscal years and making those funds available to cover some of the costs incurred by the FY2022 bill.

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[3] These totals include funds that were added to the bill for the National Guard and Reserves Equipment Account (NGREA) as well as funds added for aircraft, aircraft modifications, and ground vehicles earmarked by the Appropriations Committees for reserve and National Guard use.

[4] S&T projects focus on relatively basic research to develop technologies that could be incorporated into subsequent research aimed developing deployable hardware. For additional information, see CRS In Focus IF10553, *Defense Primer: RDT&E*.

[5] For additional background and analysis, see CRS Insight IN11728, *The Collapse of the Afghan National Defense and Security Forces: Implications for U.S. Security Assistance and Cooperation*; and CRS Report R46879, *U.S. Military Withdrawal and Taliban Takeover in Afghanistan: Frequently Asked Questions*.

[6] As House and Senate negotiators craft a compromise version of the bill, the armed services routinely weigh in with a letter appealing some of the line-item reductions in one or both versions, including some that the committees report as "fact-of-life" changes. For example, on November 12, 2021, the Navy Department sent the House and Senate Appropriations Committees an 87-page document objecting to 56 line-item reductions to the Navy budget request made by one or both of the committees. *Department of the Navy, Budgetary Appeal: Conference Appeal, FY22 Defense Appropriations Bill*, November 12, 2021, posted by *Politico Pro*, November 30, 2021.

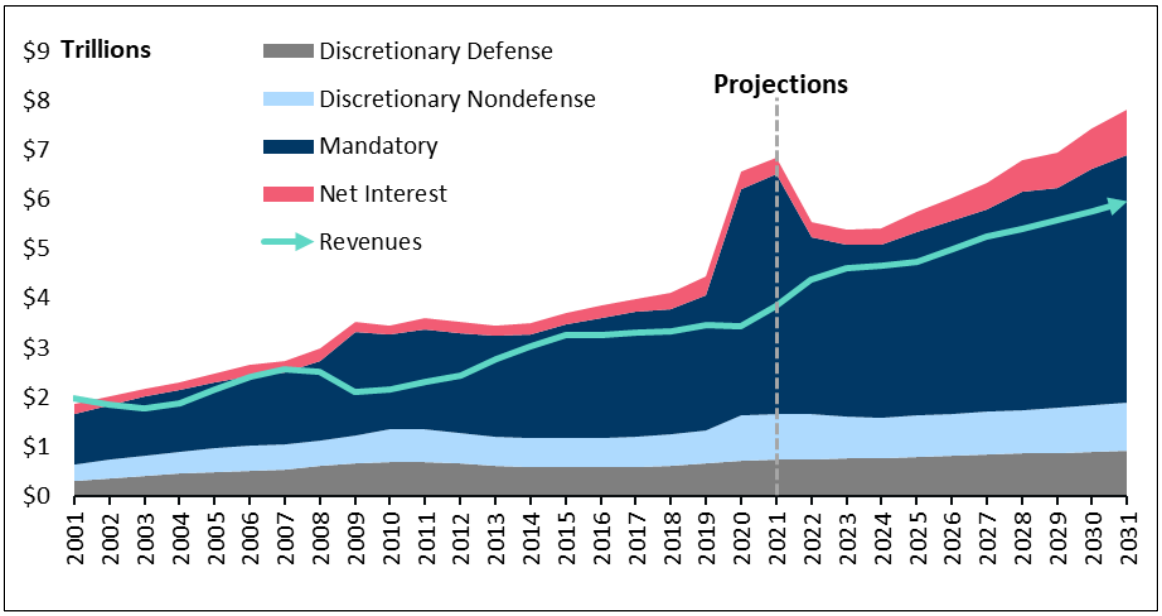
Budgetary Context[7]

Congressional consideration of the FY2022 defense appropriations bill occurred in the context of concern over a rising federal deficit. In July 2021, the Congressional Budget Office (CBO) projected a federal deficit of $3.0 trillion for FY2021, or 13.4% of Gross Domestic Product (GDP).[8] That percentage would be the second-highest since 1945.[9] CBO attributed the size of the projected deficit in part to "the economic disruption caused by the 2020-2021 coronavirus pandemic and the legislation enacted in response."[10] CBO projects spending will continue to exceed revenues over the next decade.[11] See **Figure 1**.

From FY2022 to FY2031, CBO projects discretionary defense outlays will increase 23% and nondefense discretionary outlays 6%; mandatory outlays will increase 40% and net interest payments on the national debt 198%.[12]

Figure 1. Outlays by Budget Enforcement Category and Revenues, FY2001-FY2031 (Projected)

(in trillions of nominal dollars)



Sources: CRS analysis of Government Publishing Office (GPO), *Budget of the U.S. Government Fiscal Year 2022*, Historical Tables, **Figure 1**.4, "Receipts, Outlays, and Surpluses or Deficits (-) by Fund Group: 1934-2026," and

[7] This section was coordinated with Brendan W. McGarry, Analyst in U.S. Defense Budget, and Megan S. Lynch, Specialist on Congress and the Legislative Process.

[8] Congressional Budget Office, *Additional Information About the Updated Budget and Economic Outlook: 2021 to 2031*, July 2021, "At a Glance," p. 2 of the PDF, at https://www.cbo.gov/system/files/2021-07/57263-outlook.pdf#page=2.

[9] Ibid.

[10] Ibid.

[11] Ibid., pp. 6, 16; and CBO, Budget and Economic Data, 10-Year Budget Projections, July 2021, Table 1-1, "CBO's Baseline Budget Projections, by Category," and Table 1-4, "CBO's Baseline Projections of Discretionary Spending," at https://www.cbo.gov/system/files/2021-07/51118-2021-07-budgetprojections.xlsx. Outlays refer to money spent by a federal agency from authority provided by Congress.

[12] Ibid.

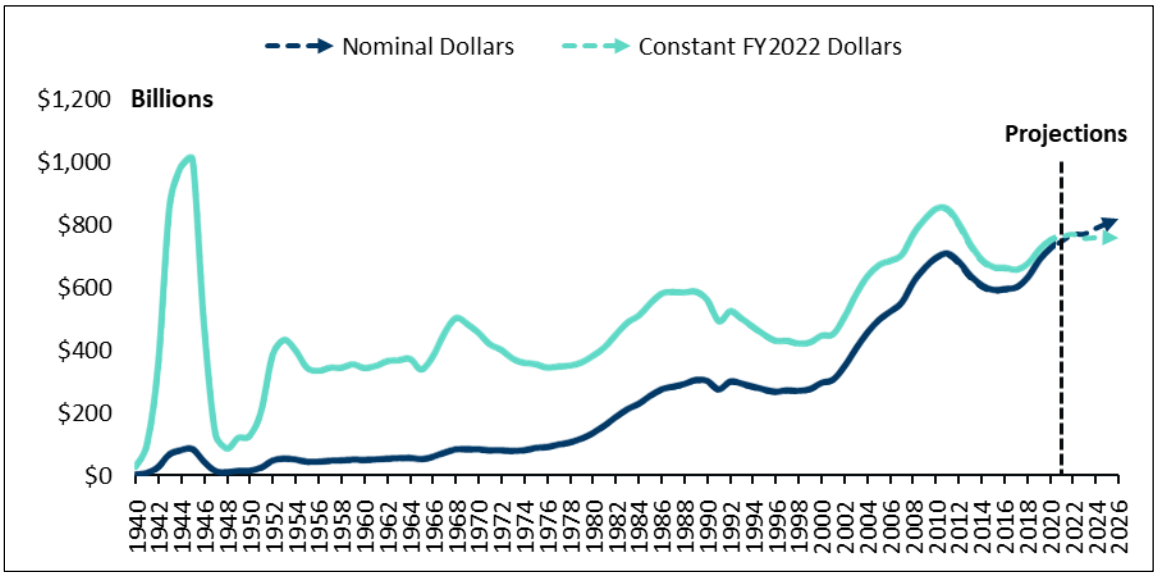
Table 8.1, "Outlays by Budget Enforcement Act Category: 1962-2026," and Congressional Budget Office, Budget and Economic Data, 10-Year Budget Projections, July 2021, Table 1-1, "CBO's Baseline Budget Projections, by Category," and Table 1-4, "CBO's Baseline Projections of Discretionary Spending."

Note: 2001 through 2020 reflect OMB amounts; 2021 through 2031 reflect CBO projections.

For historical context, **Figure 2** shows defense spending over time in both nominal and constant FY2022 dollars. The inflation-adjusted line shows the cyclical nature of defense spending during wartime. The level of defense outlays requested for national defense in FY2022, when adjusted for inflation, is higher than during the Cold War-era military buildup of the 1980s and lower than during the height of post-9/11 operations in Iraq and Afghanistan. Defense outlays are projected to remain relatively flat through FY2026.[13]

Figure 2. National Defense Outlays, FY1940-FY2026 (projected)

(in billions of nominal and constant FY2022 dollars)



Source: CRS analysis of GPO, *Budget of the U.S. Government Fiscal Year 2022*, Historical Tables, Table 3.1 and Table 10.1.

Notes: FY2021 through FY2026 reflect projections. Figures adjusted to constant FY2022 dollars using GDP (chained) price index in Table 10.1.

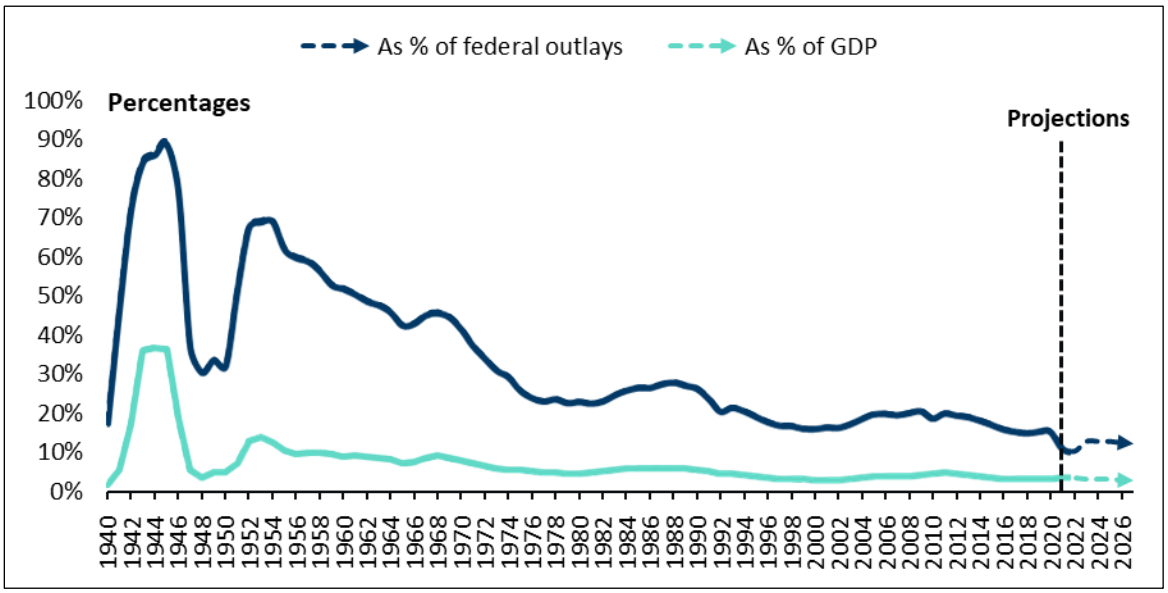
Figure 3 shows defense spending over time as a share of both federal outlays and GDP. Defense outlays have steadily decreased from peaks of nearly 90% of federal outlays and more than a third of the overall economy in the 1940s during World War II—to less than 13% of federal outlays and 3.3% of the economy in FY2022.[14]

[13] CRS analysis of GPO, *Budget of the U.S. Government Fiscal Year 2022*, Historical Tables, Table 3.1, "Outlays by Superfunction and Function: 1940-2026," at https://www.govinfo.gov/content/pkg/BUDGET-2022-TAB/xls/BUDGET-2022-TAB-4-1.xlsx; and Table 10.1, "Gross Domestic Product and Deflators Used in the Historical Tables: 1940-2026," at https://www.govinfo.gov/content/pkg/BUDGET-2022-TAB/xls/BUDGET-2022-TAB-11-1.xlsx.

[14] CRS analysis of GPO, *Budget of the U.S. Government Fiscal Year 2022*, Historical Tables, Table 3.1, "Outlays by Superfunction and Function: 1940-2026," at https://www.govinfo.gov/content/pkg/BUDGET-2022-TAB/xls/BUDGET-2022-TAB-4-1.xlsx.

Figure 3. National Defense Outlays as Share of Total Federal Outlays and GDP, FY1940-FY2026 (projected)

(in percentages)



Source: CRS analysis of GPO, *Budget of the U.S. Government Fiscal Year 2022*, Historical Tables, Table 3.1.

Note: FY2021 through FY2026 reflect projections.

Selected Military Personnel Issues

End-Strength

As enacted, the legislation is to fund a force of 1.35 million military personnel from the active components and 799,500 members of the reserve and National Guard components. Compared with the budget request, this amounts to increases in active component personnel of 720 in the Navy and 926 in the Air Force. See **Table 2**.

Table 2. FY2021-22 Military Personnel End-Strength: H.R. 4432 and S. 3023, Div. A

	FY2021 actual	FY2022 request	House Committee-reported H.R. 4432	Senate Committee Majority-drafted bill S. 3023, Div. A	FY2022 Defense Appropriations Enacted H.R. 2471 Div. C, Part A (P.L. 117-103)
Active Forces					
Army	485,900	485,000	485,000	485,000	485,000
Navy	347,800	346,200	346,200	346,200	346,920
Marine Corps	181,200	178,500	178,500	178,500	178,500
Air Force	333,475	328,300	328,300	328,300	329,226
Space Force	—	8,400	8,400	8,400	8,400
Total, Active Force	**1,348,375**	**1,346,400**	**1,346,400**	**1,346,400**	**1,348,040**

	FY2021 actual	FY2022 request	House Committee-reported H.R. 4432	Senate Committee Majority-drafted bill S. 3023, Div. A	FY2022 Defense Appropriations Enacted H.R. 2471 Div. C, Part A (P.L. 117-103)
Reserve and National Guard Forces *(Selected Reserve)*[a]					
Army Reserve	189,800	189,500	189,500	189,500	189,500
Navy Reserve	58,800	58,600	58,600	58,600	58,600
Marine Corps Reserve	38,500	36,800	36,800	36,800	36,800
Air Force Reserve	70,300	70,300	70,300	70,300	70,300
Army National Guard	336,500	336,000	336,000	336,000	336,000
Air National Guard	108,100	108,300	108,300	108,300	108,300
Total, Selected Reserve	**802,000**	**799,500**	**799,500**	**799,500**	**799,500**
Grand Total, Military Personnel	**2,150,375**	**2,145,900**	**2,145,900**	**2,145,900**	**2,147,540**

Source: CRS analysis of H.Rept. 117-88, House Appropriations Committee, *Report to Accompany Department of Defense Appropriations bill* (H.R. 4432), July 15, 2021; *Explanatory Statement for the Department of Defense Appropriations Bill, Fiscal Year 2022*, committee print released by the Senate Appropriations Committee on Oct. 18, 2021, at https://www.appropriations.senate.gov/imo/media/doc/DEFRept_FINAL.PDF; and the joint explanatory statement to accompany the Department of Defense Appropriations Act, 2022 (Division C of P.L. 117-103), Part 1, at https://docs.house.gov/billsthisweek/20220307/BILLS-117RCP35-JES-DIVISION-C_Part1.pdf; and Part 2, at https://docs.house.gov/billsthisweek/20220307/BILLS-117RCP35-JES-DIVISION-C_Part2.pdf.

Note:

a. The Selected Reserve are, in general, those units and individuals who train for at least one weekend per month in addition to one two-week period per year. See CRS In Focus IF10540, *Defense Primer: Reserve Forces*.

Military Pay Raise

The enacted legislation funds a 2.7% increase in military basic pay, as proposed by the Administration. This would match the annual increase in the Employment Cost Index (ECI), a Labor Department survey of wages and salaries in private industry.[15]

Sexual Assault Prevention and Response

The enacted legislation provided a total of $539.6 million—nearly 40% more than was requested—for programs intended to reduce the incidence of sexual assault in the armed forces and to deal with its consequences.[16] Additions to the original $388.3 million request comprise

- $97.0 million (spread across a dozen appropriations accounts) to implement the recommendations of a DOD Commission on Sexual Assault in the Military that was set up in March of 2021 at the direction of President Biden;

[15] For background, see CRS In Focus IF10260, *Defense Primer: Military Pay Raise*.

[16] For background, see CRS Report R44944, *Military Sexual Assault: A Framework for Congressional Oversight*.

- $47.0 million for DOD's Special Victim's Counsel office, that provides confidential legal assistance to victims of sexual assault; and
- $7.5 million for the Sexual Assault Prevention and Response organization in the Office of the Secretary of Defense.

Selected Defense Health Program Issues

Proposed Defense Health Agency (DHA) Reorganization

For the third year in a row, the enacted legislation did not fund a request to continue a reorganization of the Defense Health Agency that was mandated by the FY2017 NDAA (P.L. 114-328), and subsequent legislation codified in 10 U.S.C. §§1073c-1073d. The plan would streamline DOD medical operations by shifting uniformed military personnel from major medical centers toward more direct combat-support functions. Civilian medical personnel would replace some of those military members in staffing military medical facilities and some military dependents and retirees would be required to obtain treatment from non-DOD medical facilities with costs to be covered by DOD's TRICARE system.[17]

The enacted bill, like the precursor bills in the House and Senate, denied the $104.5 million requested to hire civil service and contract employees to replace military personnel in the DOD medical facilities billets.[18] In its report on H.R. 4432, the House committee said it did not recommend the funds, "given the continued lack of details regarding the quality and availability of care for beneficiaries, as well as a negative impact on readiness that may be caused by an unnecessary or potentially dangerous shedding of military medical providers."[19]

The House committee also ordered the Assistant Secretary of Defense for Health Affairs to provide to the congressional defense committees a report on DOD's response to a May 2020 report by the Government Accountability Office (GAO), which warned that dependents and retirees in some areas might encounter a shortage of quality civilian health care providers.[20]

Selected Readiness Issues

PFAS Pollution Remediation[21]

The enacted legislation provided $1.51 billion for environmental remediation at current and former military bases, nearly half again as much as the $1.03 billion budget request for those activities. Of the $486.5 million the bill added to the amount requested, $210.0 million is intended to speed up DOD cleanup efforts aimed at groundwater contamination by certain highly

[17] For background, see CRS In Focus IF11273, *Military Health System Reform*, and CRS In Focus IF11458, *Military Health System Reform: Military Treatment Facilities*.

[18] See H.Rept. 117-88, p. 333; and Explanatory Statement accompanying the Senate Appropriations Committee-version of the Department of Defense Appropriations Act, 2022, p. 219, at https://www.appropriations.senate.gov/imo/media/doc/DEFRept_FINAL.PDF.

[19] H.Rept. 117-88, pp. 332-333.

[20] Ibid.

[21] For background and additional analysis, see CRS Report R45986, *Federal Role in Responding to Potential Risks of Per- and Polyfluoroalkyl Substances (PFAS)*.

toxic chemicals, collectively referred to as PFAS, which were widely used as a fire-fighting agent.

Red Hill (Hawaii) Fuel Depot Leak

The enacted legislation provided a total of $686.4 million to deal with the effects of water pollution from the Navy's Red Hill bulk fuel depot, which consists of 20 massive fuel tanks with a capacity of more than 200 million gallons of ship and aircraft fuel buried in a hillside overlooking Pearl Harbor, a few miles northwest of downtown Honolulu. The World War II-era facility sits over Honolulu's aquifer and occasional fuel leaks and spills have been a source of concern over the risk of water contamination.

On March 7, 2022, Defense Secretary Lloyd Austin announced that Red Hill's fuel inventory would be moved elsewhere and the facility closed.[22]

Environment and Climate Change Issues

The enacted legislation provided $150.0 million, as requested, for DOD's Readiness and Environmental Protection Integration (REPI) program, which provides for land and wildlife conservation activities on land to provide buffers for military installations against flooding and real estate development that might impinge on military operations.

The House committee report expressed concern about the effects on DOD operations of climate change, including the already observed rise in sea-level and recurring flooding. It also expressed concern that DOD "is contributing to this crisis as a large consumer of fossil fuels and producer of greenhouse gases."[23] The panel directed the Secretary of Defense to submit a report on DOD's use of fossil fuels during FY2021 including a summary of efforts to prioritize missions that would reduce fossil fuel consumption and of investments in technologies intended to increase fuel efficiency.[24]

The House committee also directed the Secretary of Defense to submit a report on plans to reduce greenhouse gas emissions, by installation. In its report on the bill, the committee said it "expects the Department of Defense to integrate considerations of climate impacts into all aspects of military planning and funding."[25]

The House committee noted that federal energy management requirements currently apply only to the portion of DOD's energy consumption used by fixed installations and non-combat vehicles, amounting to 30% of the department's annual energy consumption. It ordered the department to report on the implications of applying those requirements to operational forces, which account for the balance of its energy usage.[26]

[22] DOD, "Statement by Secretary of Defense Lloyd J. Austin III on the Closure of the Red Hill Bulk Fuel Storage Facility," March 7, 2022, at https://www.defense.gov/News/Releases/Release/Article/2957825/statement-by-secretary-of-defense-lloyd-j-austin-iii-on-the-closure-of-the-red/.

[23] H.Rept. 117-88, p. 100.

[24] Ibid.

[25] Ibid., pp. 105-06.

[26] Ibid.

Selected Acquisition Issues

Strategic Nuclear Forces

With relatively minor reductions, the enacted legislation funded the Administration's budget request to continue across-the-board modernization of the U.S. triad for long-range nuclear weapon delivery. As requested, the bill included the initial increments of procurement funding for the B-21 long-range bomber and for the Ground-Based Strategic Deterrent (GBSD), a new intercontinental ballistic missile (ICBM) slated to replace the 1970s-vintage Minuteman III (see **Table 3**).

The legislation also funded, with relatively minor cuts, continued development of those systems and the Long-Range Stand-Off Weapon (LRSO), an air-launched cruise missile planned to replace the 1980s-vintage air-launched cruise-missile (ALCM) carried by some U.S. bombers.

The legislation provided the requested funds for Columbia-class ballistic missile-armed submarines. This included $3.0 billion of estimated $14.0 billion cost of the first of a planned fleet of 12 ships and $1.64 billion for advance procurement of components intended for use in 11 subsequent ships of that class.[27]

Strategic Nuclear Forces

For background and additional analysis, see CRS In Focus IF10519, *Defense Primer: Strategic Nuclear Forces*, and CRS Report RL33640, *U.S. Strategic Nuclear Forces: Background, Developments, and Issues*.

Ship-launched Nuclear Cruise Missile

The House committee-reported bill would have denied the Administration's request for $5.2 million to begin development of a ship-launched, nuclear-armed cruise missile. The enacted legislation included those funds.

Table 3. Selected Strategic Nuclear Weapons Systems

(in millions of dollars)

Program (relevant CRS report)	Appropriation Type	FY2022 Request	House Committee -reported H.R. 4432	Senate Committee Majority-drafted bill S. 3023, Div. A	FY2022 Defense Appropriations Enacted H.R. 2471 Div. C, Part A (P.L. 117-103)
B-21 Bomber *(R44463)*	Procurement	108.0	108.0	108.0	108.0
	R&D	2,872.6	2,872.6	2,872.6	2,872.6
Bomber Upgrades *(R43049)*	Procurement	135.4	139.5	127.8	127.8
	R&D	889.0	821.6	875.0	817.6

[27] CBO projects that first Columbia-class submarine will cost $14.5 billion and that the average cost of the 11 later ships will be $7.5 billion (all amounts in FY2021 dollars). For additional background, see CRS Report R41129, *Navy Columbia (SSBN-826) Class Ballistic Missile Submarine Program: Background and Issues for Congress*. See H.Rept. 117-88, pp. 183, 187; and Explanatory Statement accompanying the Senate Appropriations Committee-version of the Department of Defense Appropriations Act, 2022, pp. 107, at https://www.appropriations.senate.gov/imo/media/doc/DEFRept_FINAL.PDF.

Program (relevant CRS report)	Appropriation Type	FY2022 Request	House Committee -reported H.R. 4432	Senate Committee Majority-drafted bill S. 3023, Div. A	FY2022 Defense Appropriations Enacted H.R. 2471 Div. C, Part A (P.L. 117-103)
Columbia-class Ballistic Missile Sub *(R41129)*	Procurement	4,647.0	4,604.8	4,777.0	4,777.0
	R&D	296.2	308.7	306.2	311.2
Trident II (D-5) Sub-launched Missile Mods	Procurement	1,144.4	1,120.2	1,144.4	1,120.2
	R&D	177.1	149.9	162.6	187.0
Ground-Based Strategic Deterrent (new ICBM) *(RL33640)*	Procurement	10.9	8.9	8.9	8.9
	R&D	2,553.5	2,531.6	2,553.5	2,553.5
Long-Range Standoff Weapon (new air-launched cruise missile)	R&D	609.0	581.0	609.0	599.0

Source: CRS analysis of Department of Defense Budget Justification Books, FY2023 (see Appendix); Also, CRS analysis of H.Rept. 117-88, House Appropriations Committee, *Report to Accompany Department of Defense Appropriations bill* (H.R. 4432), July 15, 2021; *Explanatory Statement for the Department of Defense Appropriations Bill, Fiscal Year 2022*, committee print released by the Senate Appropriations Committee on Oct. 18, 2021, at https://www.appropriations.senate.gov/imo/media/doc/DEFRept_FINAL.PDF; and the joint explanatory statement to accompany the Department of Defense Appropriations Act, 2022 (Division C of P.L. 117-103), Part 1, at https://docs.house.gov/billsthisweek/20220307/BILLS-117RCP35-JES-DIVISION-C_Part1.pdf; and Part 2, at https://docs.house.gov/billsthisweek/20220307/BILLS-117RCP35-JES-DIVISION-C_Part2.pdf.

Precision Strike Weapons

As enacted, the legislation generally supported the requests for funds for each of the Armed Forces to develop and begin deploying several kinds of non-nuclear-armed, precision-strike missiles with ranges of between 100 miles and more than 1,000 miles (see **Table 4**). These include ballistic and cruise missiles as well as hypersonic weapons: maneuverable missiles that travel at speeds of at least five times the speed of sound (Mach 5 or more than 3,800 mph).

Hypersonic Weapons

For background and additional information, see CRS Report R45811, *Hypersonic Weapons: Background and Issues for Congress*; and CRS In Focus IF11991, *The U.S. Army's Long-Range Hypersonic Weapon (LRHW)*.

Air-Launched Rapid Response Weapon (Air Force)

Like the precursor bills in the House and Senate, the enacted defense legislation sought to facilitate congressional oversight by approving separate amounts to fund development of two types of air-launched, hypersonic missiles that the Air Force had included in a single R&D budget line labelled "Hypersonic Prototyping." The legislation provided

- $190.1 million of the $200.1 million requested to continue development of a scramjet-powered cruise missile[28] designated Hypersonic Attack Cruise Missile; and
- $318.7 million—$80.4 million more than was requested—to continue development of a rocket-powered missile designated Air-Launched Rapid Response Weapon (ARRW) with the additional funds directed to increase testing of the weapon.

Citing test failures, conferees eliminated from the enacted bill the request for $160.9 million to begin ARRW procurement.

Table 4. Selected Precision Strike Systems

(in millions of dollars)

Program *(relevant CRS report)*	Appropriation Type	FY2022 Request	House Committee-reported H.R. 4432	Senate Committee Majority-drafted bill S. 3023, Div. A	FY2022 Defense Appropriations Enacted H.R. 2471 Div. C, Part A (P.L. 117-103)
Ballistic Missiles					
Precision Strike Missile (PRSM) [Army]	Procurement	166.1	166.1	166.1	166.1
	R&D	188.5	188.5	188.5	188.5
Mobile Medium-Range Missile [Army]	R&D	286.5	286.5	286.5	286.5
Hypersonic Weapons					
Conventional Prompt Strike [Navy] *(R41464)*	R&D	1,372.3	1,275.4	1,266.3	1,324.1
Long-Range Hypersonic Weapon [Army] *(IF11991)*	R&D	300.9	300.9	310.4	315.4
Air-Launched Rapid Response Weapon (ARRW) [Air Force][a]	Procurement	160.9	116.9	80.4	0.0
	R&D	238.3	238.3	238.3	318.7
Hypersonic Attack Cruise Missile [Air Force]	R&D	200.1	190.1	190.1	190.1

Source: CRS analysis of Department of Defense Budget Justification Books, FY2023 (see Appendix); Also, CRS analysis of H.Rept. 117-88, House Appropriations Committee, *Report to Accompany Department of Defense Appropriations bill* (H.R. 4432), July 15, 2021; *Explanatory Statement for the Department of Defense Appropriations Bill, Fiscal Year 2022*, committee print released by the Senate Appropriations Committee on Oct. 18, 2021, at https://www.appropriations.senate.gov/imo/media/doc/DEFRept_FINAL.PDF; and the joint explanatory statement to accompany the Department of Defense Appropriations Act, 2022 (Division C of P.L. 117-103), Part 1, at

[28] Rockets carry an oxygen source to support the combustion of their fuel whereas cruise missiles need carry only the fuel, since they take in oxygen from their operational environment. Thus, to strike targets at any given range, cruise missiles can be smaller than rocket powered weapons, allowing them to be carried by smaller aircraft.

https://docs.house.gov/billsthisweek/20220307/BILLS-117RCP35-JES-DIVISION-C_Part1.pdf; and Part 2, at https://docs.house.gov/billsthisweek/20220307/BILLS-117RCP35-JES-DIVISION-C_Part2.pdf.

Note:

a. The budget request included funding for ARRW and Hypersonic Attack Cruise Missile in a single line labelled "Hypersonic Prototyping." The House and Senate committees each recommended funding the two programs in separate lines at the amounts requested.

Anti-Missile Defense

In general, the enacted legislation supported, with minor reductions, the funding requested to continue fielding anti-ballistic missile defenses including both a system of long-range interceptors designed to protect U.S. territory against ICBMs and shorter-range THAAD and Aegis systems designed to protect U.S. forces and allies abroad against shorter-range missiles (see **Table 5**).

"Layered" Homeland Defense

Conferees on the bill challenged a DOD plan to integrate the two types of systems into a "layered defense" of U.S. territory. Under this plan, the longer-range defensive missiles would be backstopped by THAAD and Aegis systems that would engage attacking missiles that penetrated the initial defense. On grounds that the Administration had not adequately justified the plan, the enacted bill cut a total of $250.0 billion from various missile defense R&D projects.

Pacific Defenses

The enacted legislation added to the request a total of $149.1 million to accelerate DOD efforts to deploy anti-missile defenses in the Pacific. The request included a total of $118.3 million to develop and begin fielding defenses on Guam, the U.S. territory closest to China and North Korea. The bill added a total of $80 million to accelerate the project, but partly offsets that increase by cutting $5.1 million on grounds that DOD had not informed Congress about important details of the project.

The legislation also added $75.0 million to continue work on a long-range missile tracking radar in Hawaii. DOD postponed work on the project in 2020, partly because of local opposition in Hawaii. DOD had requested no funds for the radar in FY2022.

Iron Dome for Israel

Section 8142 of the enacted legislation provided $1.0 billion to replenish Israel's arsenal of Tamir interceptor missiles for its Iron Dome anti-rocket defenses, which were heavily used in May 2021 during an 11-day war between Israel and Hamas, the U.S.-designated Foreign Terrorist Organization that exercises de facto control over Gaza.[29] The Iron Dome Supplemental Appropriations Act (H.R. 5323), passed by the House on September 23, 2021, would have appropriated the same amount for that purpose, as would have the version of the FY2022 defense appropriation bill drafted by the Senate Appropriations Committee's majority caucus.

These funds are in addition to the $108.0 million the enacted defense bill provided, as requested, to buy Iron Dome systems for U.S. use.

[29] For background, see CRS Report R44245, *Israel: Background and U.S. Relations in Brief* and CRS Report RL33222, *U.S. Foreign Aid to Israel*. This funding for Israeli use is in addition to the $108.0 million the House and Senate bills would have provided, as requested, to procure Iron Dome systems for U.S. use.

Table 5. Selected Anti-missile Defense Systems

(in millions of dollars)

Program *(relevant CRS report)*	Appropriation Type	FY2022 Request	House Committee-reported H.R. 4432	Senate Committee Majority-drafted bill S. 3023, Div. A	FY2022 Defense Appropriations Enacted H.R. 2471 Div. C, Part A (P.L. 117-103)
Mid-Course Defense System	R&D	805.6	800.6	736.0	786.5
Improved Mid-Course Defense *(new interceptor and radar)*	R&D	1,059.4	1,059.4	1,058.4	1,017.5
Defense of Guam	R&D	78.3	62.4	138.3	112.4
	Procurement	40.0	0.0	80.0	80.0
Hawaii radar	R&D	0.0	75.0	41.0	75.0
Israeli Cooperative Programs	Procurement	62.0	62.0	62.0	62.0
	R&D	300.0	300.0	300.0	300.0
Terminal Defense (THAAD and Patriot)	Procurement	251.5	251.5	380.7	380.7
	R&D	310.6	246.1	266.3	247.1
Aegis Ballistic Missile Defense	Procurement	696.0	696.0	868.7	868.7
	R&D	892.7	788.0	800.0	793.9
Iron Dome (for U.S.)	Procurement	108.0	108.0	108.0	108.0
Iron Dome (for Israel)	Procurement	0.0	0.0	1,000.0	1,000.0

Source: CRS analysis of Department of Defense Budget Justification Books, FY2023 (see Appendix); Also, CRS analysis of H.Rept. 117-88, House Appropriations Committee, *Report to Accompany Department of Defense Appropriations bill* (H.R. 4432), July 15, 2021; *Explanatory Statement for the Department of Defense Appropriations Bill, Fiscal Year 2022*, committee print released by the Senate Appropriations Committee on Oct. 18, 2021, at https://www.appropriations.senate.gov/imo/media/doc/DEFRept_FINAL.PDF; and the joint explanatory statement to accompany the Department of Defense Appropriations Act, 2022 (Division C of P.L. 117-103), Part 1, at https://docs.house.gov/billsthisweek/20220307/BILLS-117RCP35-JES-DIVISION-C_Part1.pdf; and Part 2, at https://docs.house.gov/billsthisweek/20220307/BILLS-117RCP35-JES-DIVISION-C_Part2.pdf.

Space Programs

The enacted legislation provided, with some relatively small reductions, the funding requested for the largest of DOD's space-related acquisition programs (see **Table 6**). These include the GPS III navigation satellite system, a new generation of missile tracking satellites designated Overhead Persistent Infra-Red (OPIR), and the National Security Space Launch program, which uses three kinds of rockets to launch relatively large satellites for DOD and U.S. intelligence agencies.

Next Generation Missile Tracking Satellite (OPIR)

The enacted legislation provided $2.34 billion of the $2.45 billion requested to continue developing a satellite network that would use infra-red sensors to track long-range missiles. The system, intended to replace the current network of SBIRS satellites, would include some satellites in geo-stationary orbits, other satellites in polar orbits, and ground-based control systems.

Following the pattern set by the bill introduced in the Senate, the enacted legislation provided the funds in four separate amounts, apportioned among the two types of satellites, the ground systems, and an additional amount. In the explanatory statement accompanying the bill introduced in the Senate, the Appropriations Committee's majority directed the Air Force to present future budget requests separately for each of the three components of the program to facilitate closer congressional oversight.

Table 6. Selected Defense Space Systems

(in millions of dollars)

Program *(relevant CRS report)*	Appropriation Type	FY2022 Request	House Committee-reported H.R. 4432	Senate Committee Majority-drafted bill S. 3023, Div. A	FY2022 Defense Appropriations Enacted H.R. 2471 Div. C, Part A (P.L. 117-103)
National Security Space Launch	Procurement	1,337.3	1,337.3	1,307.4	1,327.3
	R&D	221.5	184.6	294.5	201.5
Global Positioning System	Procurement	688.2	681.6	677.7	939.6
	R&D	1,121.5	1,121.5	1.086.2	1092.2
SBIRS missile detection satellite, and follow-on	Procurement	154.5	154.5	154.5	154.5
	R&D	2,451.3	2,451.3	2,127.8	2,338.9

Source: CRS analysis of Department of Defense Budget Justification Books, FY2023 (see Appendix); Also, CRS analysis of H.Rept. 117-88, House Appropriations Committee, *Report to Accompany Department of Defense Appropriations bill* (H.R. 4432), July 15, 2021; and *Explanatory Statement for the Department of Defense Appropriations Bill, Fiscal Year 2022*, committee print released by the Senate Appropriations Committee on Oct. 18, 2021, at https://www.appropriations.senate.gov/imo/media/doc/DEFRept_FINAL.PDF.

Ground Systems

The enacted legislation generally supported the Army's plan to modernize its suite of ground combat vehicles. It provided (with relatively minor reductions) the funds requested to upgrade Bradley and Stryker armored troop carriers and added to the budget request funds to accelerate upgrades to Abrams tanks and Paladin self-propelled howitzers (see **Table 7**).

It also funded the request to begin production of a relatively lightweight tank (designated the Mobile Protected Firepower system) that could be deployed with infantry units more easily than the 70-ton Abrams. The bill provided, with minor reductions, the funds requested to continue developing a new infantry fighting vehicle (designated the Optionally Manned Fighting Vehicle) to succeed the Bradley.

IVAS Night Vision System

The conference report slowed the Army's plan to begin equipping tens of thousands of front-line troops with wearable night vision viewers that also could display targeting crosshairs and navigation information, like the heads-up display (HUD) of a fighter plane. In March 2021, the Army contracted with Microsoft to spend up to $21.9 billion over 10 years to procure this

Integrated Visual Augmentation Systems (IVAS), based on the firm's HoloLens augmented reality goggles.[30]

The enacted legislation cuts $448.9 million from the Army's request for $853.9 million to buy more than 29,000 IVAS units in FY2022 and barred the Army from spending more than 85% of the amount provided until the system completed operational testing. In the accompanying explanatory statement, conferees said the bill added $55.5 million to the Army's R&D account for IVAS because the system had encountered "recent developmental challenges and increased testing requirements."

The Army had announced in October 2021 that it was slowing the pace at which it planned to issue IVAS to troops.[31]

Table 7. Selected Ground Combat Systems

(in millions of dollars)

Program *(relevant CRS report)*	**Appropriation Type**	**FY2022 Request**	**House Committee-reported H.R. 4432**	**Senate Committee Majority-drafted bill S. 3023, Div. A**	**FY2022 Defense Appropriations Enacted H.R. 2471 Div. C, Part A (P.L. 117-103)**
M-1 Abrams tank upgrade	Procurement	981.3	960.3	1,156.3	1,145.8
Bradley Fighting Vehicle Mod	Procurement	461.4	440.4	472.8	460.4
Stryker Combat Vehicle Mod	Procurement	1,005.0	956.0	977.3	1,082.8
Paladin 155 mm. Self-propelled Howitzer *(R46721)*	Procurement	446.4	526.2	662.9	662.9
Next Generation Combat Vehicles					
Mobile Protected Firepower *[light tank]* *(IF11859)*	Procurement	287.0	287.0	287.0	287.0
Optionally Manned Fighting Vehicle *[Bradley Replacement] (R45519)*	R&D	225.1	201.6	202.4	202.3
Short-range antiaircraft, anti-rocket defenses *(R46463)*					
Indirect Fire-Protection Capability, Increment 2	Procurement	25.3	19.1	25.3	19.1
	R&D	233.5	221.0	162.8	182.3
M-SHORAD	Procurement	331.6	331.6	331.6	331.6

Source: CRS analysis of Department of Defense Budget Justification Books, FY2023 (see Appendix); Also, CRS analysis of H.Rept. 117-88, House Appropriations Committee, *Report to Accompany Department of Defense*

[30] Sydney J. Freedberg Jr., "IVAS: Microsoft Award by Army Worth Up to $21.9 Billion," *Breaking Defense*, March 31, 2021, at https://breakingdefense.com/2021/03/ivas-microsoft-award-worth-up-to-21-9b/.

[31] Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology, "Statement on the Integrated Visual Augmentation System," October 18, 2021, at https://www.army.mil/article/251258/joint_asa_alt_and_afc_statement_on_the_integrated_visual_augmentation_system.

Appropriations bill (H.R. 4432), July 15, 2021; *Explanatory Statement for the Department of Defense Appropriations Bill, Fiscal Year 2022*, committee print released by the Senate Appropriations Committee on Oct. 18, 2021, at https://www.appropriations.senate.gov/imo/media/doc/DEFRept_FINAL.PDF; and the joint explanatory statement to accompany the Department of Defense Appropriations Act, 2022 (Division C of P.L. 117-103), Part 1, at https://docs.house.gov/billsthisweek/20220307/BILLS-117RCP35-JES-DIVISION-C_Part1.pdf; and Part 2, at https://docs.house.gov/billsthisweek/20220307/BILLS-117RCP35-JES-DIVISION-C_Part2.pdf.

Shipbuilding Programs

Following the pattern set by the Armed Services and Appropriations Committees in recent years, the enacted legislation funds the construction of more ships than were requested in the budget. The legislation added an Aegis destroyer, an underway refueling tanker, and two ships designed to support amphibious landings (see **Table 8**).

Citing concern over China's naval modernization efforts, the congressional defense committees repeatedly have expressed support for the Navy's desire to enlarge the fleet to something substantially more than 300 ships. The committees also have not objected to the Navy's desire to shift to a more-distributed fleet architecture, based on a larger number of smaller ships. At the same time, the committees have expressed frustration at the lack of an updated force-level goal and an up-to-date 30-year shipbuilding plan.[32] They also have pushed back on some of the Navy's plans for acquiring new ship types, citing cost growth, schedule delays, and technical problems experienced by certain shipbuilding programs.[33]

Navy Shipbuilding Plans

For additional background and analysis, see CRS Report RL32665, *Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress*.

Budgetary "Maneuvers" and Destroyers

In the explanatory statement accompanying the enacted bill, conferees asserted that the FY2022 budget request "continues a trend by the Navy to submit budgets to the Congress that deliberately underfund programs deemed by the Navy to be critical, with the expectation that the congressional appropriations committees will restore funds for these programs."

The immediate focus of the conferees objection was that the Navy requested funds to buy one DDG-51-class Aegis destroyer in FY2022—thus breaking an existing contract that would require funding for two ships—while simultaneously listing the second destroyer as the top priority on its list of unfunded priorities.[34]

The legislation added to the request $1.66 billion for a second destroyer plus $120 million to buy components that would support procurement of an additional DDG-51 in FY2023 or some other future fiscal year.

[32] For more information, see CRS Report RL32665, *Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress*.

[33] Ibid.

[34] Department of Defense (DOD) unfunded priorities generally refer to reports submitted to Congress pursuant to United States Code provisions (10 U.S.C. §222a and 10 U.S.C. §222b) listing military programs, activities, or mission requirements that were not included in the President's annual budget request but that the department would fund with additional appropriations. For FY2022, DOD identified $23.85 billion in unfunded priorities, according to CRS analysis of the documents. For additional information, see CRS In Focus IF11964, *Defense Primer: Department of Defense Unfunded Priorities*.

Frigates

With a relatively minor reduction, the enacted legislation provided the funds requested for the third of a projected 20-ship class of frigates—warships smaller than destroyers and intended to operate against less heavily armed adversaries. Designated the *Constellation*-class, the ships are based on an Italian-French designed class of frigates already in service for other navies. The explanatory statement accompanying the bill in the Senate cautioned the Navy against prematurely beginning to build the frigates in a second shipyard before resolving the technical and production issues that often arise with the construction of a new class of ships.[35]

Unmanned Vessels

The enacted legislation is generally supportive of Navy plans to acquire various types of unmanned vessels. However, it cut from the request—on grounds that it was premature—$42 million to integrate missile launchers into the largest of the unmanned surface ship designs.

Table 8. Selected Ship Programs

(in millions of dollars)

Program (*relevant CRS report*)	Appropriation Type	FY2022 request	House Committee-reported H.R. 4432	Senate Committee Majority-drafted bill S. 3023, Div. A	FY2022 Defense Appropriations Enacted H.R. 2471 Div. C, Part A (P.L. 117-103)
Ford-class aircraft carrier *(RS20643)*	Procurement	2,368.5	2,349.9	2,368.5	2,349.9
Carrier refueling and modernization	Procurement	2,522.3	2,331.3	2,510.5	2,490.5
Virginia-class attack submarine *(RL32418)*	Procurement	6,369.6	6,434.3	6,434.2	6,339.6
Aegis destroyer	Procurement	2,016.8	3,334.8	3,796.0	3,796.0
Frigate	Procurement	1,157.0	1,157.0	1,090.9	1,090.9
Fleet Oiler *(R43546)*	Procurement	744.2	688.2	668.2	1,463.8
Expeditionary Sea Base	Procurement	0.0	0.0	577.0	577.0
Expeditionary Fast Transport	Procurement	0.0	0.0	590.0	590.0
Light Amphibious Warship *(R46374)*	R&D	13.2	13.2	13.2	13.2
Next Generation Logistics Ship *(IF11674)*	R&D	27.8	24.3	21.2	24.3
Large Unmanned Surface Vehicle *(R45757)*	R&D	144.8	102.8	71.7	102.8

[35] Ibid., pp. 107-08.

Large Unmanned Undersea Vehicle *(R45757)*	R&D	88.1	81.4	57.0	66.7

Source: CRS analysis of Department of Defense Budget Justification Books, FY2023 (see Appendix); Also, CRS analysis of H.Rept. 117-88, House Appropriations Committee, *Report to Accompany Department of Defense Appropriations bill* (H.R. 4432), July 15, 2021; *Explanatory Statement for the Department of Defense Appropriations Bill, Fiscal Year 2022*, committee print released by the Senate Appropriations Committee on Oct. 18, 2021, at https://www.appropriations.senate.gov/imo/media/doc/DEFRept_FINAL.PDF; and the joint explanatory statement to accompany the Department of Defense Appropriations Act, 2022 (Division C of P.L. 117-103), Part 1, at https://docs.house.gov/billsthisweek/20220307/BILLS-117RCP35-JES-DIVISION-C_Part1.pdf; and Part 2, at https://docs.house.gov/billsthisweek/20220307/BILLS-117RCP35-JES-DIVISION-C_Part2.pdf.

Aircraft Systems

The enacted legislation generally supported the Administration's aircraft budget plus additions that continue certain congressional initiatives in recent years: acquiring additional F/A-18s for the Navy and additional Black Hawk helicopters and C-130 transport planes for reserve and National Guard units (see **Table 9**).

Aircraft Procurement Plans

For background and additional analysis, see CRS In Focus IF10999, *Defense's 30-Year Aircraft Plan Reveals New Details*.

The enacted legislation provided $9.77 billion for procurement of 85 F-35 fighters (plus modifications to planes already purchased). Three versions of the aircraft are used by the Navy, Marine Corps, and Air Force. This is the first time since Congress acted on the 2015 budget that the annual appropriations bill did not fund more F-35s than requested.

Whereas the Administration proposed ending procurement of the F/A-18E/F, the enacted legislation added to the budget $900 million to buy 12 additional aircraft.

As has been routine for years, the legislation added funds for non-requested aircraft to equip reserve and National Guard units. The bill added $211.0 million for nine Black Hawk helicopters for the National Guard, $429.2 million for four C-130s for the Air Force Reserve, and $1.80 billion for 16 C-130s for the Air National Guard.

Table 9. Selected Aircraft Systems

(in millions of dollars)

Program *(relevant CRS report)*	**Appropriation Type**	**FY2022 Request**	**House Committee-reported H.R. 4432**	**Senate Committee Majority-drafted bill S. 3023, Div. A**	**FY2022 Defense Appropriations Enacted H.R. 2471 Div. C, Part A (P.L. 117-103)**
F-35 Joint Strike Fighter and mods *(RL30563)*	Procurement	9,971.0	9,819.6	9,667.3	9,769.5
	R&D	2,053.3	2,053.3	1,707.3	2,173.3
F-15 mods	Procurement	1,719.0	1,610.6	1,592.0	1,581.1
	R&D	469.8	469.8	458.8	469.8
F-18 Hornet and mods	Procurement	1,200.2	2,001.6	1,180.8	2,029.8

Program *(relevant CRS report)*	**Appropriation Type**	**FY2022 Request**	**House Committee-reported H.R. 4432**	**Senate Committee Majority-drafted bill S. 3023, Div. A**	**FY2022 Defense Appropriations Enacted H.R. 2471 Div. C, Part A (P.L. 117-103)**
F-22 mods	Procurement	424.7	364.7	340.4	407.9
	R&D	647.3	647.3	647.3	647.3
Next-Generation Air Dominance (NGAD) *(IF11659)*	R&D	1,524.7	1,524.7	1,524.7	1,524.7
KC-46 tanker *(RL34398)*	Procurement	2,380.3	2,325.3	2,209.0	2,289.0
UH-60 Black Hawk	Procurement	942.5	949.2	942.5	949.2
AH-64 Apache	Procurement	814.9	804.9	789.9	779.2
CH-47 Chinook	Procurement	163.7	333.7	163.7	333.4

Source: CRS analysis of Department of Defense Budget Justification Books, FY2023 (see Appendix); Also, CRS analysis of H.Rept. 117-88, House Appropriations Committee, *Report to Accompany Department of Defense Appropriations bill* (H.R. 4432), July 15, 2021; *Explanatory Statement for the Department of Defense Appropriations Bill, Fiscal Year 2022*, committee print released by the Senate Appropriations Committee on Oct. 18, 2021, at https://www.appropriations.senate.gov/imo/media/doc/DEFRept_FINAL.PDF; and the joint explanatory statement to accompany the Department of Defense Appropriations Act, 2022 (Division C of P.L. 117-103), Part 1, at https://docs.house.gov/billsthisweek/20220307/BILLS-117RCP35-JES-DIVISION-C_Part1.pdf; and Part 2, at https://docs.house.gov/billsthisweek/20220307/BILLS-117RCP35-JES-DIVISION-C_Part2.pdf.

Appendix.

Tables 4-10 of this report summarize the amounts requested by the Administration, recommended by the House and Senate, and agreed to in the enacted version for procurement and/or research and development (R&D) regarding selected weapons programs in each of several broad categories (e.g., missile defense, ground combat). The funding data for these selected programs is drawn from 17 procurement appropriation accounts and five R&D accounts that are components of the DOD budget. Each of those accounts is further subdivided into "line items"—dozens of them in some procurement accounts, and hundreds of them in most of the R&D accounts.

The official DOD labels of some line items may not correspond to the names that commonly are used to refer to programs in the course of congressional deliberations. Moreover, funding for a single program may be spread across several line items. In addition, R&D funding for a particular program may be only one of several projects funded by a single line item.

Selection of the budget lines to be included in the totals for any program listed in any of the tables is based on CRS analysis. For further information concerning any specific instance, congressional staff may consult relevant CRS products listed in the tables or any of the following CRS analysts.

CRS Experts: Defense Appropriations Issues

Issue	CRS Analyst
Military Personnel/End-strength	Lawrence Kapp
Military Personnel/Compensation	Lawrence Kapp
Military Personnel/Social Issues	Kristy Kamarck
Defense Health Care	Bryce Mendez
Pollution/Environmental Issues	David Bearden
Precision Strike Weapons	John Hoehn
Missile Defense	Stephen McCall
Defense Space Systems	Stephen McCall
Ground Combat Systems	Andrew Feickert
Naval Warfare Systems	Ron O'Rourke
Military Aviation Systems	John Hoehn

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