

# **The Long-Term Implications of Current Defense Plans: Detailed Update for Fiscal Year 2005**

## **List of Briefing Slides**

### Introduction

Figure 1-1: Past and Projected Spending for Defense

Figure 1-2: Defense Spending as a Share of the Federal Budget and Gross Domestic Product

Figure 2-1: Spending for Operation and Support, by Functional Category

Figure 2-2: Spending for Operation and Support, by Military Department

Figure 2-3: Spending for Operation and Support, by Account

Figure 2-4: Spending for Operating Forces, by Military Department

Figure 2-5: Spending for the Military Medical System, by Category

Figure 3-1: Spending for Investment, by Budget Account and Weapon Type

Figure 3-2: Spending for Investment, by Military Department

Figure 3-3: Past and Projected Army Spending for Investment

Figure 3-4: Procurement of Army Ground Combat Vehicles

Figure 3-5: Age and Inventory of Army Ground Combat Vehicles

Figure 3-6: Procurement of Army Helicopters

Figure 3-7: Age and Inventory of Army Helicopters

Figure 3-9: Past and Projected Navy and Marine Corps Spending for Investment

Figure 3-10: Procurement of Battle Force Ships

Figure 3-11: Age and Inventory of Battle Force Ships

Figure 3-12: Procurement of Navy Fighter and Attack Aircraft

Figure 3-13: Age and Inventory of Navy Fighter and Attack Aircraft

Figure 3-14: Procurement of Marine Corps Helicopters

Figure 3-15: Age and Inventory of Marine Corps Helicopters

Figure 3-16: Procurement of Marine Corps Ground Combat Vehicles

Figure 3-17: Age and Inventory of Marine Corps Ground Combat Vehicles

Figure 3-19: Past and Projected Air Force Spending for Investment

Figure 3-20: Procurement of Air Force Fighter and Attack Aircraft

Figure 3-21: Age and Inventory of Air Force Fighter and Attack Aircraft

Figure 3-22: Procurement of Air Force Bombers

Figure 3-23: Age and Inventory of Air Force Bombers

Figure 3-24: Procurement of Air Force Airlifters

Figure 3-25: Age and Inventory of Air Force Airlifters

Figure 3-26: Procurement of Air Force Tankers

Figure 3-27: Age and Inventory of Air Force Tankers

Figure 3-29: Past and Projected Investment Spending for Defense Agencies

Figure 3-30: Past and Projected Investment Spending for Missile Defense

Figure 3-31: Procurement Versus Steady-State Levels

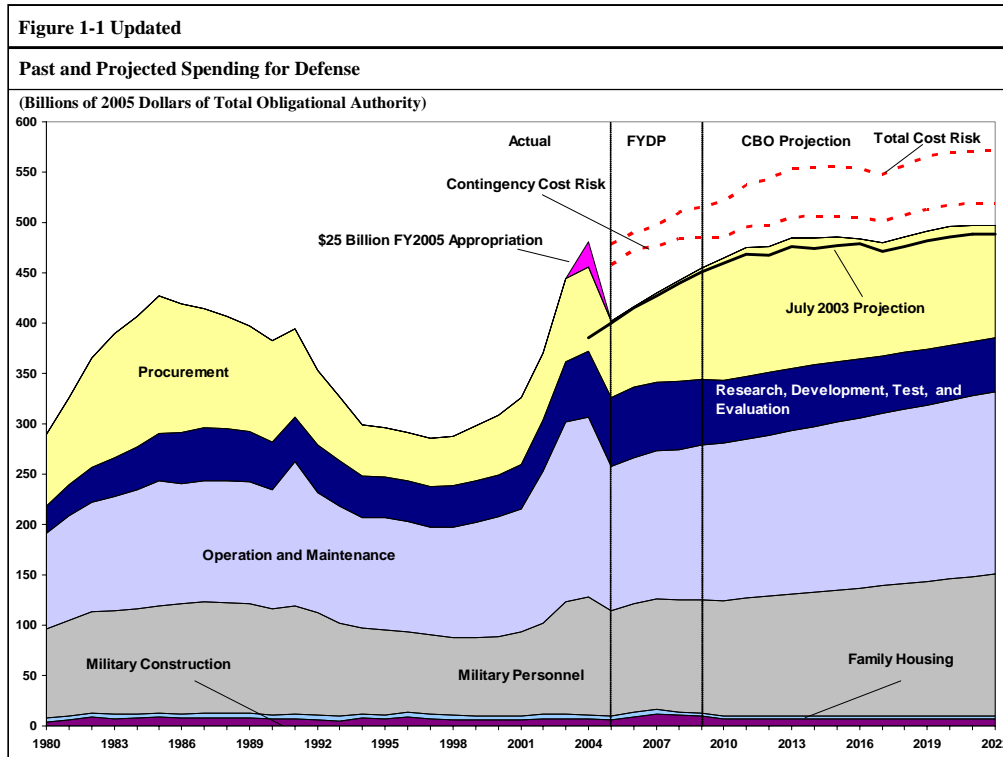
Appendix: Acronyms and Abbreviations

## **The Long-Term Implications of Current Defense Plans:**

Detailed Update for Fiscal Year 2005

All Costs in Billions of 2005 Dollars

- In January 2003, the Congressional Budget Office (CBO) published *The Long-Term Implications of Current Defense Plans*, which was based on the President's budget for fiscal year 2003 and the Department of Defense's 2003 Future Years Defense Program (FYDP).
- CBO updated that analysis in July 2003 in *The Long-Term Implications of Current Defense Plans: Summary Update for Fiscal Year 2004* and in February 2004 in *The Long-Term Implications of Current Defense Plans: Detailed Update for Fiscal Year 2004*. Those publications revised CBO's earlier work to take into account changes incorporated in the President's budget for fiscal year 2004 and the 2004 FYDP.
- This briefing updates the February 2004 *Detailed Update* to account for changes incorporated in the President's budget for fiscal year 2005 and the 2005 FYDP. It is a companion piece to CBO's fiscal year 2005 *Summary Update*.
- This briefing does not incorporate changes to the FYDP resulting from Congressional action on the President's 2005 budget request.
- The Congress has passed a 2005 appropriation bill for the Department of Defense (DoD), excluding military construction and family housing, which are appropriated in a different bill. CBO estimates that Congressional appropriations will reduce DoD's total obligational authority (TOA) by approximately \$1 billion in 2005 relative to the President's request of \$402 billion.
- Numerous charts in this detailed update use the concepts of "steady state" and "half-life" for DoD investment plans and weapon systems. Those concepts are explained more fully in Box 1-3 of CBO's January 2003 study and in Figure 3-31 in this briefing.
- These updated displays differ in some instances from those contained in CBO's January 2003 study. In some cases, the display format has been altered to include additional historical data. In other cases, corrections to CBO's historical database of procurement quantities and spending have caused changes; for example, procurement spending on Army helicopters during the 1980s is corrected in this update. And in many instances, the color schemes used in the updated displays differ from those in the corresponding versions in CBO's January 2003 study.



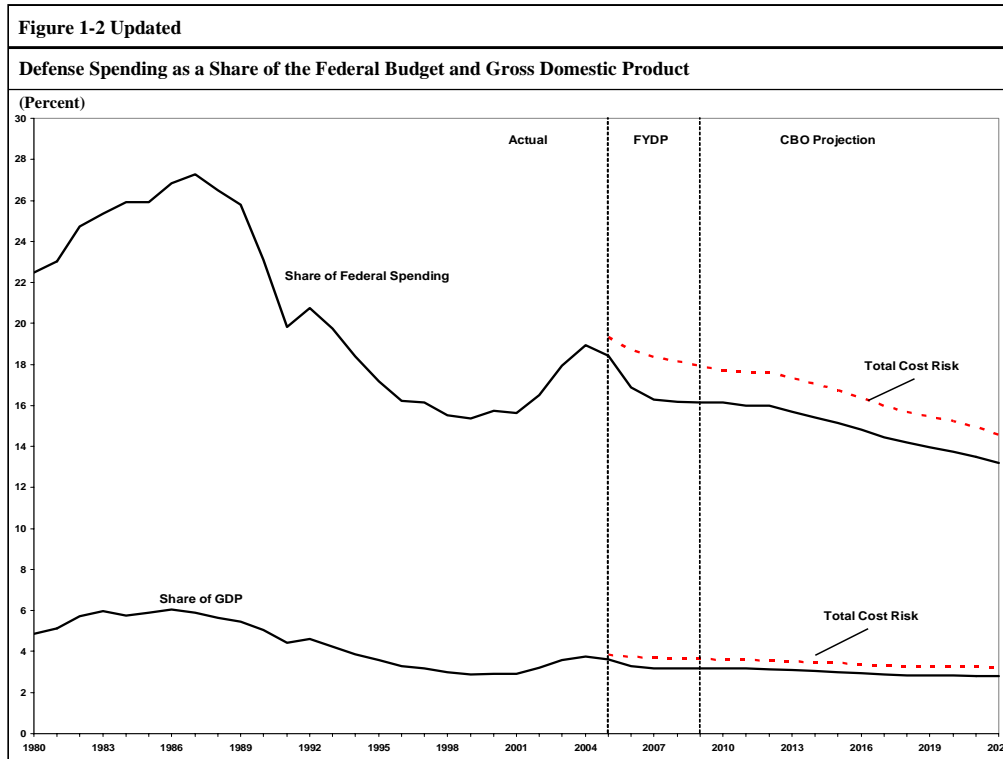
- This chart updates Figure 1-1 of CBO’s February 2004 Web document *The Long-Term Implications of Current Defense Plans: Detailed Update for Fiscal Year 2004*. It shows total obligational authority for the Department of Defense for the 1980-2022 period. TOA for defense grew rapidly between the early and mid-1980s, reaching a peak of \$427 billion in 1985 (all funds are in inflation-adjusted 2005 dollars). TOA then generally declined during the late 1980s and into the 1990s, reaching about \$285 billion in 1997. DoD’s TOA began to rise thereafter, reaching \$326 billion by 2001. It has grown even more rapidly in recent years as U.S. forces have become engaged in operations in Afghanistan and Iraq. In 2004, DoD’s TOA reached \$481 billion, including \$68 billion in supplemental funding and \$25 billion provided as part of the fiscal year 2005 Department of Defense Appropriations Act.

- The 2005 FYDP—on which CBO based the projections shown in this briefing—anticipated that defense resources (excluding supplemental appropriations) would rise from \$402 billion for 2005 to \$455 billion for 2009.

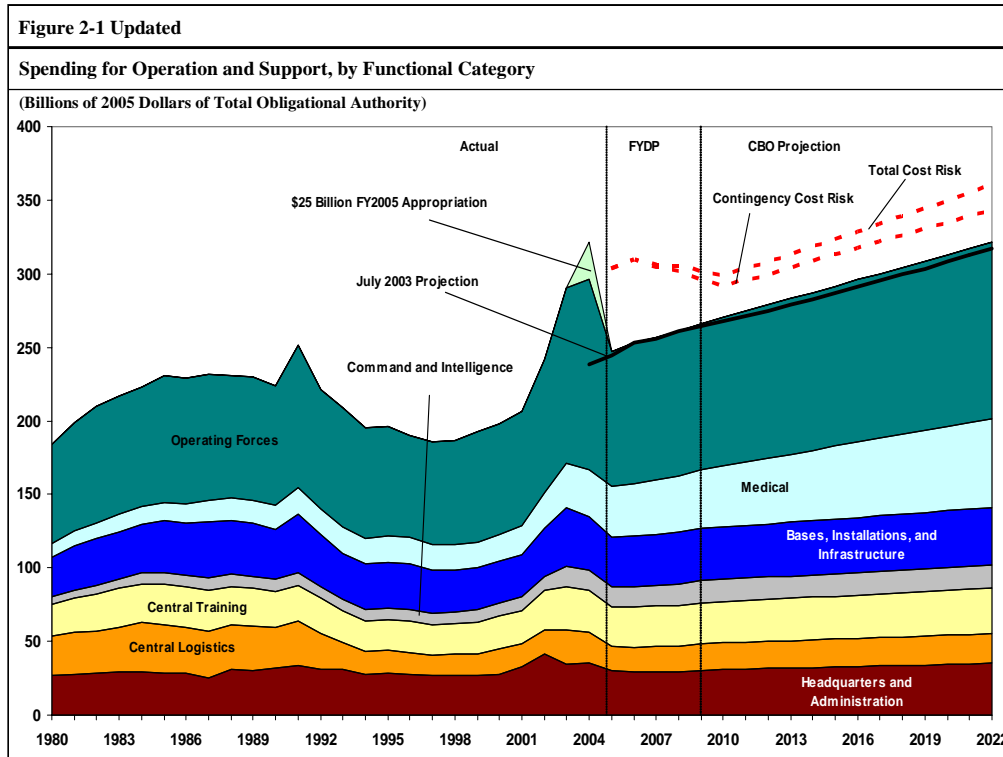
- If the program in the 2005 FYDP was carried out as currently envisioned, the demand for defense resources, excluding resources for contingencies, would average \$485 billion a year between 2010 and 2022, CBO projects—or about \$83 billion more than the 2005 request.

- CBO also made “cost-risk” projections (shown by the dashed red lines in the figure). CBO projects that resource demands including cost risk will average about \$498 billion a year through 2009 and about \$553 billion between 2010 and 2022. Those values are about 16 percent and 14 percent higher, respectively, than the amounts without cost risk. Assumptions underlying the cost-risk projections include the following:

- Costs for weapons programs grow as they have since the Vietnam War; and
- The United States continues to conduct military operations overseas as part of the global war on terrorism.



- This chart updates Figure 1-2 of CBO's February 2004 web document. It compares past and projected spending for DoD with overall federal spending and the size of the U.S. economy.
- The same historical pattern characterizes DoD's spending measured as a share of federal expenditures or of gross domestic product (GDP). Both shares grew through the early 1980s. DoD's share of GDP reached a high point in 1986, and its share of federal spending peaked in 1987. Both shares declined thereafter, reaching a low point in 1999.
- Trends in those shares during the period covered by the 2005 FYDP and by CBO's projections are also similar. Both shares grew through 2004 but begin a gradual and steady decline thereafter.
- The share of GDP attributable to defense spending falls because projected real (inflation-adjusted) increases in GDP outpace the increases projected for defense outlays.
- DoD's share of federal spending declines because projected real increases in mandatory spending for programs such as Social Security and Medicare outpace increases projected for defense spending.



- This chart updates Figure 2-1 of CBO's February 2004 Web document. The operation and support (O&S) budget, which accounts for about 60 percent of defense spending, pays for DoD's day-to-day operations as well as for military and civilian payrolls. CBO projects that without cost risk, O&S spending will reach \$322 billion in 2022.

- Most of the projected growth in O&S spending results from the growing cost of medical benefits for military personnel and from rising wages for both military and civilian personnel.

- As the dashed red lines in the figure show, growth in the demand for O&S resources could be greater than DoD anticipates. CBO estimates that with cost risk, the O&S budget could reach \$363 billion in 2022. The cost risks include:

- Continued involvement in contingency operations associated with the global war on terrorism, such as those in Afghanistan, Iraq, and elsewhere (that cost risk decreases from \$56 billion in 2005 to \$21 billion in 2022).

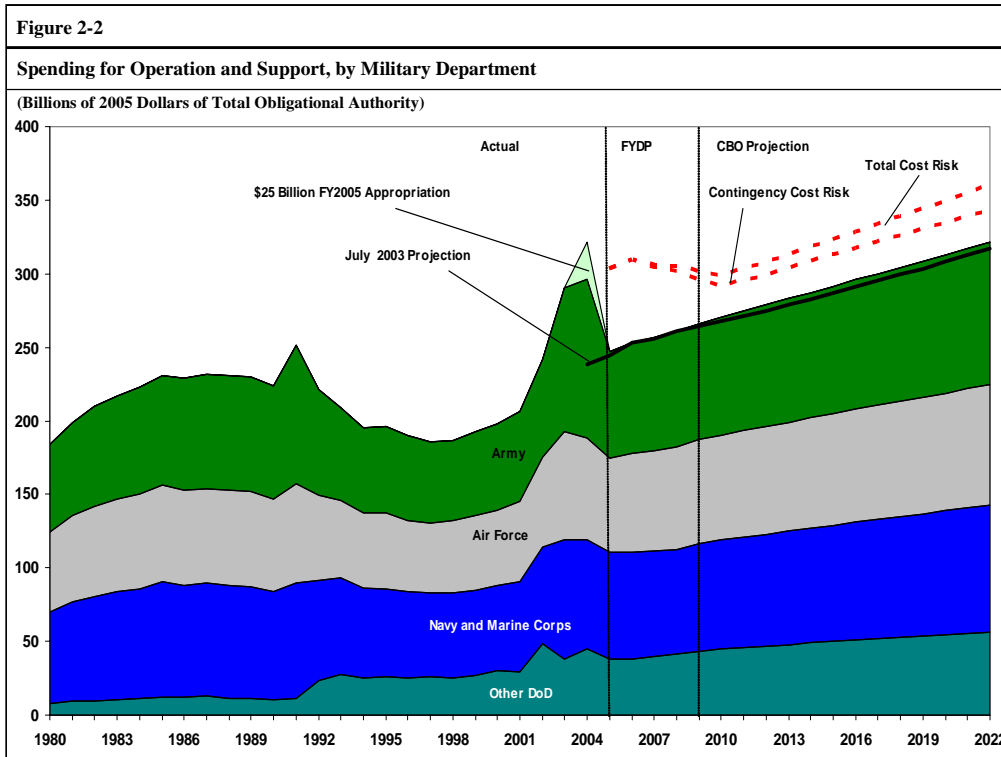
- Faster-than-expected growth in DoD's health care costs (\$11 billion of cost risk in 2022).

- A permanent increase of 30,000 in the Army's end strength (\$3 billion of cost risk in 2022).

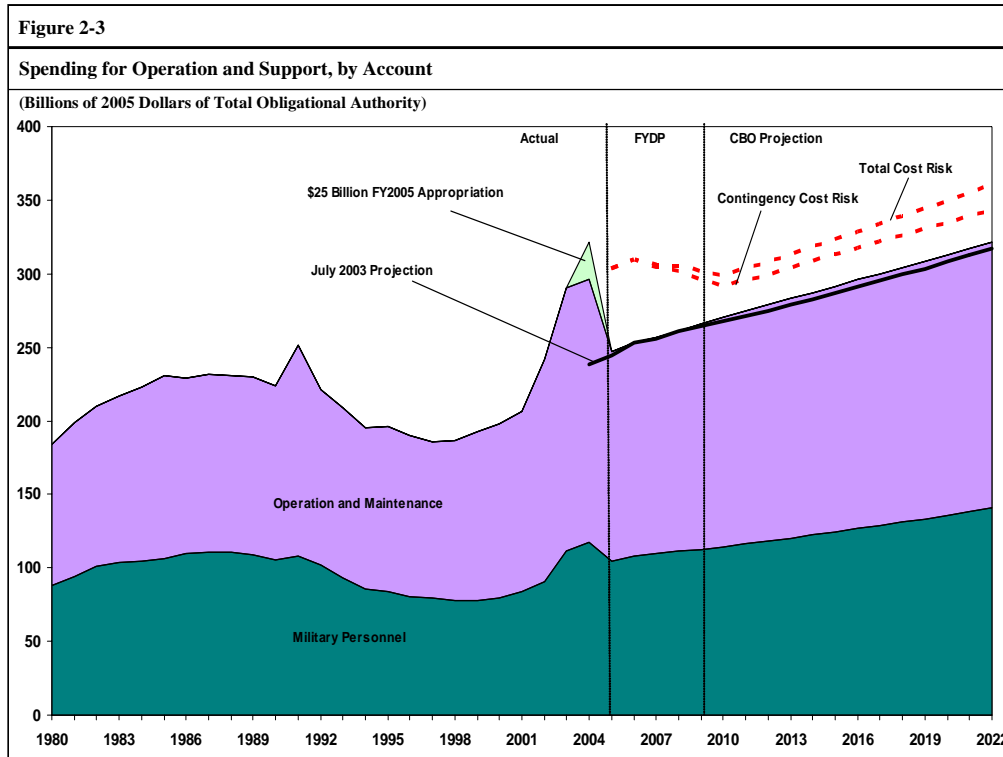
- Cancellation of the scheduled 2005 round of base realignments and closures (\$2.4 billion of cost risk in 2022).

- CBO created subcategories of O&S spending based on force and infrastructure codes used within DoD.

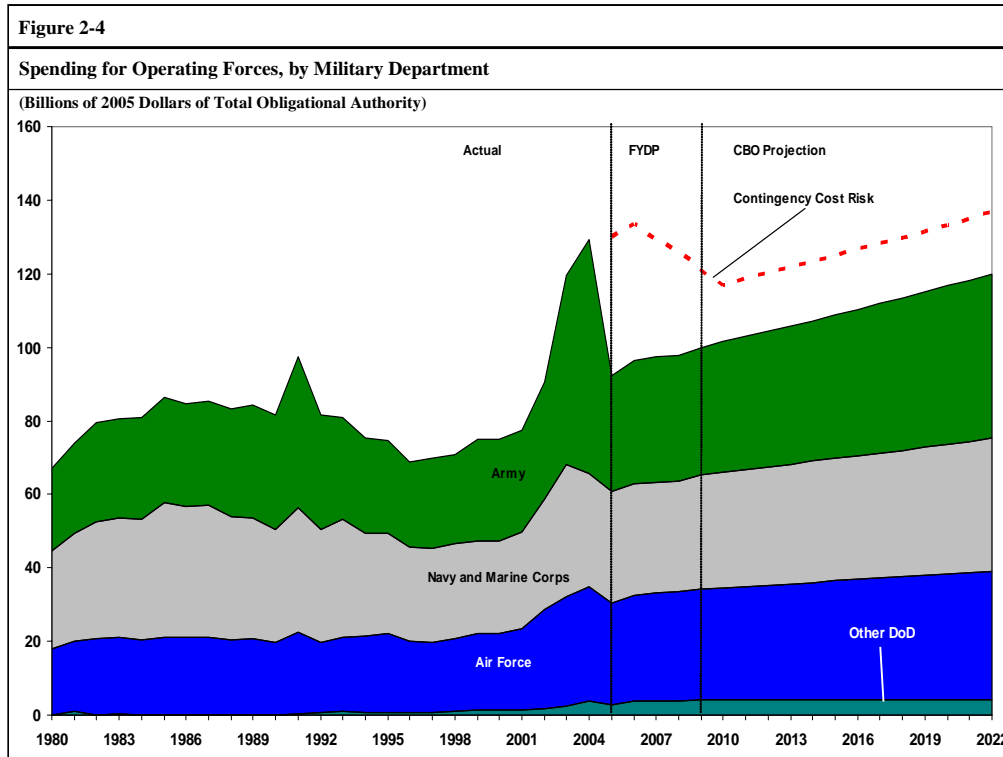
- Military and civilian pay increases account for all of CBO's projected spending growth in every subcategory except "Operating Forces" (Figure 2-4) and "Medical" (Figure 2-5). CBO projects that those pay levels will grow at the same rate as the employment cost index (ECI).



- Between 2005 and 2009, the Departments of the Army, Navy, and Air Force will receive approximately 30, 28, and 26 percent of the O&S budget, respectively. Defense-wide activities (labeled “Other DoD” in the figure), including the Defense Health Program, make up the rest of the O&S budget.
- CBO projects that for every department, average annual O&S spending will grow at a rate between 1.2 percent and 2.0 percent between 2010 and 2022.
- The Army has received the largest portion of supplemental funding for current operations and would be likely to receive the largest portion of future supplemental funding for contingencies.

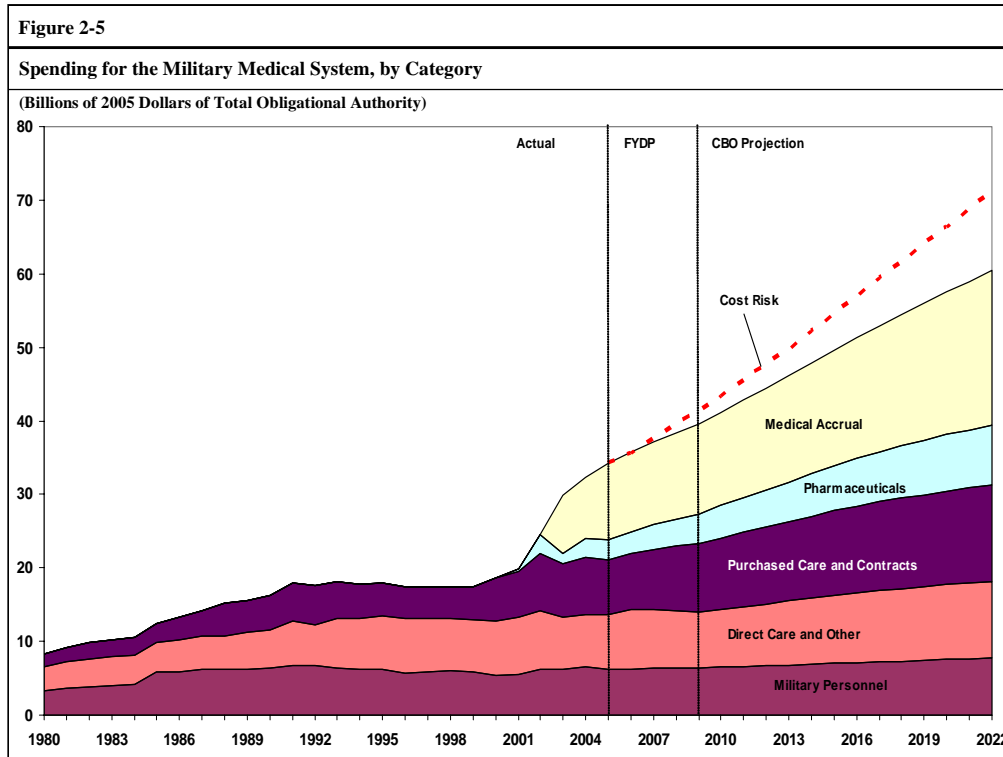


- CBO projects that military personnel spending will increase from \$114 billion in 2010 to \$141 billion in 2022, an average annual growth rate of 1.7 percent. That growth is attributable to two factors:
  - CBO's assumption, consistent with DoD planning documents, that military pay raises must keep pace with the ECI, a measure of the average pay level in the U.S. civilian economy.
  - CBO's assumption, consistent with DoD's actuaries, that medical accrual costs will steadily increase. These costs are intended to fund the future medical spending for military retirees and dependents when they reach age 65.
- Operation and maintenance (O&M) spending will increase from \$156 billion in 2010 to \$181 billion in 2022, an average annual growth rate of 1.3 percent. Most of that growth comes from:
  - The assumption that DoD must also provide civilian employees with pay raises equivalent to the ECI.
  - Increasing medical costs associated with the Defense Health Program.
- Most supplemental funding for operations in Iraq, Afghanistan, and elsewhere is allocated to O&M.



- The O&S subcategory “Operating Forces” pays for military and support units assigned to Combatant Commands.
- CBO projects that Operating Forces will experience \$9 billion of spending growth in addition to pay increases. That extra growth results from:
  - Continuing long-term trends of rising Army and Marine Corps ground force O&M costs per active-duty service member.
  - Increased O&M costs for aging weapon systems.
  - New weapon systems that are more complex and have higher O&M costs than the systems they replace.
- CBO estimates that the Operating Forces subcategory receives about two-thirds of all supplemental contingency funding. Therefore, CBO allocates about two-thirds of contingency cost risk to this category.





- CBO estimates that total real medical spending will increase by three-quarters, from \$34 billion in 2005 to over \$60 billion by 2022. Including cost risk, real medical spending could more than double, exceeding \$71 billion by 2022, CBO projects.

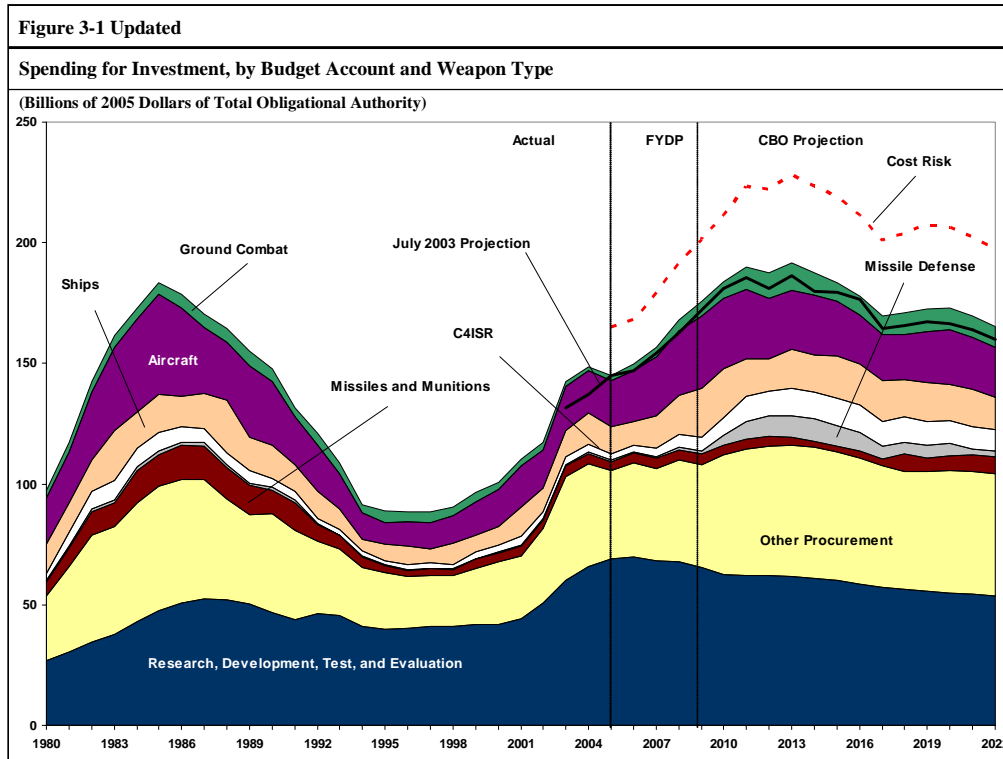
- Accrual payments for beneficiaries over age 65 will make up over 40 percent of the increase in medical spending. CBO's projection indicates that by 2022, accrual payments will be more than twice as large in real terms as they are currently, reaching a total of over \$21 billion.

- Pharmaceuticals make up the fastest-growing category of medical spending. Without cost risk, real drug expenditures will triple from \$2.7 billion in 2005 to \$8.1 billion in 2022; with cost risk included, real drug expenditures will quadruple to \$10.9 billion in 2022.

- Purchased care and private-sector contracts are projected to grow by 75 percent in real terms, from \$7.4 billion in 2005 to \$13.0 billion in 2022. With cost risk, spending in this category could increase by 111 percent in real terms, reaching \$15.7 billion in 2022.

- The military's direct-care system and other medical spending are projected to grow by 40 percent in real terms, from \$7.5 billion in 2005 to \$10.5 billion in 2022. If costs grow more quickly than anticipated by DoD, spending in this category could grow by 112 percent in real terms, reaching \$15.8 billion in 2022.

- CBO anticipates that spending on uniformed medical personnel will grow by only 26 percent in real terms by 2022, paralleling the rate of growth for other types of military personnel. CBO expects real spending in this category to grow from \$6.2 billion in 2005 to \$7.7 billion in 2022.

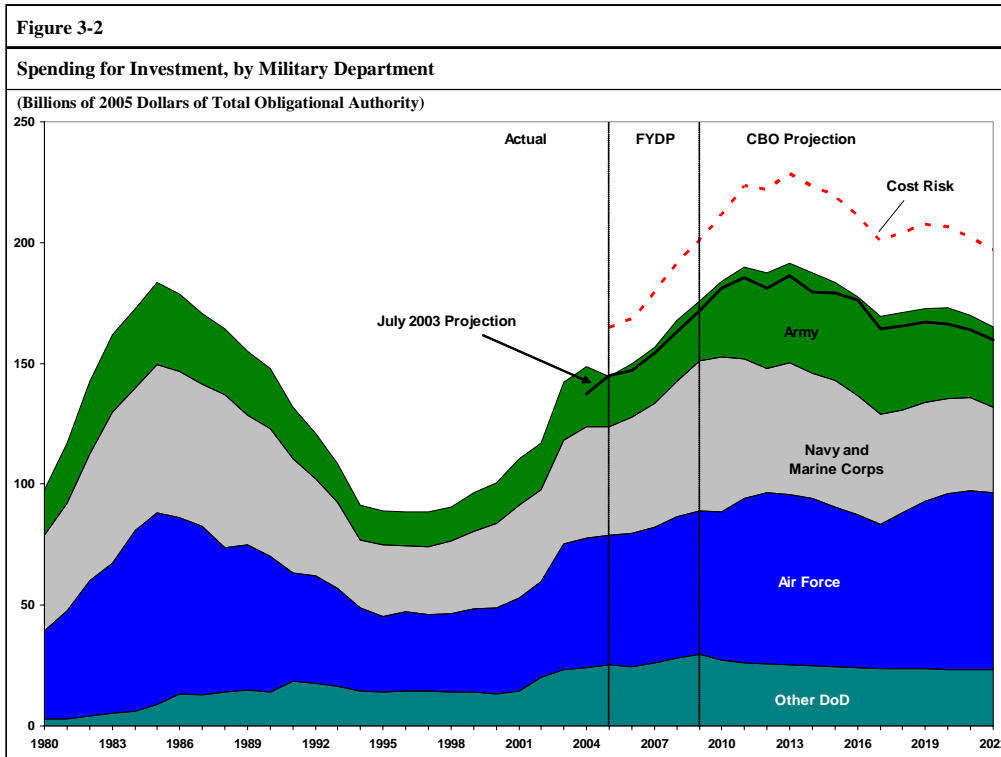


- This chart updates Figure 3-1 of CBO's February 2004 Web document. It provides a breakout of the more than one-third of DoD's budget (about \$145 billion in 2005) allocated to investment, which funds development and procurement of DoD's weapon systems.

- The 2005 FYDP anticipated that investment spending would grow to \$176 billion by 2009—about 21 percent more than in 2005. On the basis of that plan, CBO projects that if weapons costs do not grow as they have historically, investment resources will continue to increase, reaching about \$191 billion by 2013, and then decline. Over the 2010-2022 period, those resources would average about \$179 billion a year.

- That projection is about 3 percent larger than in CBO's February 2004 Web document. Most of the increase is associated with growth in the costs of the Joint Strike Fighter program and in the costs of selected command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) programs.

- If the costs of weapons grow in the future as they have over the past 30 years, resource requirements for planned purchases in 2009 could equal \$201 billion, or about 14 percent more than without cost growth. In that case, funding during the 2010-2022 period could average almost \$212 billion—about 19 percent more than without cost growth.



•During the period from 1980 to 2003, the share of DoD investment resources allocated to the military services and to other defense activities was as follows:

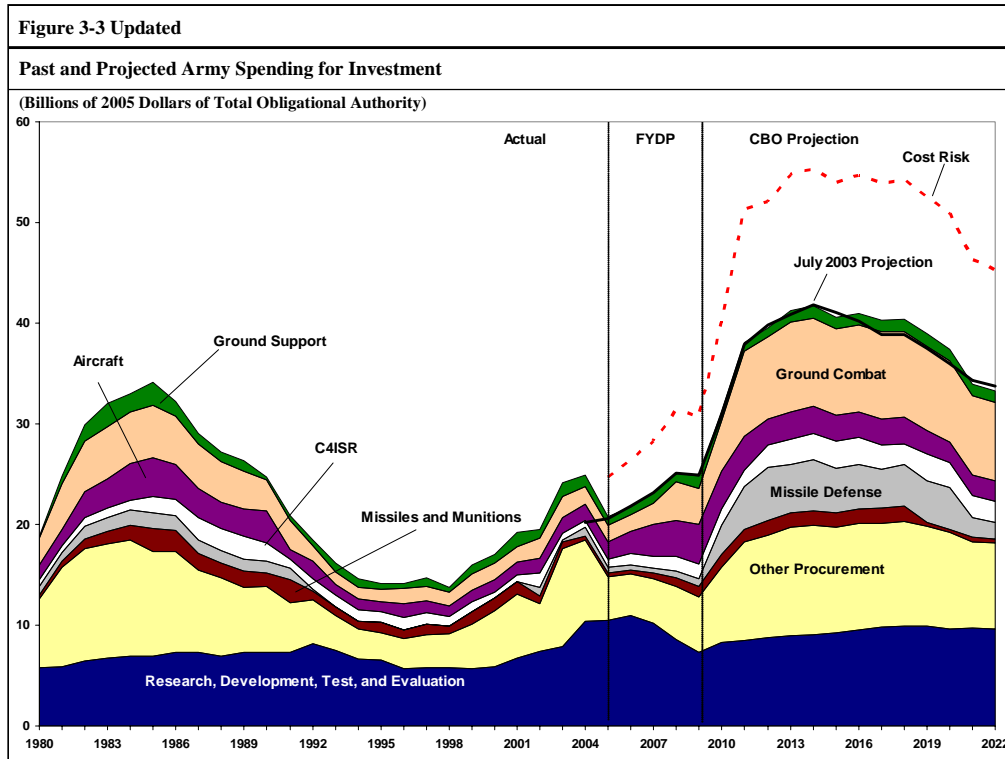
- Army investment averaged \$22 billion, 17 percent of total DoD investment;
- Navy and Marine Corps investment averaged \$44 billion, 34 percent of the total;
- Air Force investment averaged \$49 billion, 38 percent of the total; and
- Investment in other defense activities averaged \$13 billion, 11 percent of the total.

•During the period from 2005 to 2009, the share of investment resources that DoD anticipates allocating to the military services and to other defense activities is as follows:

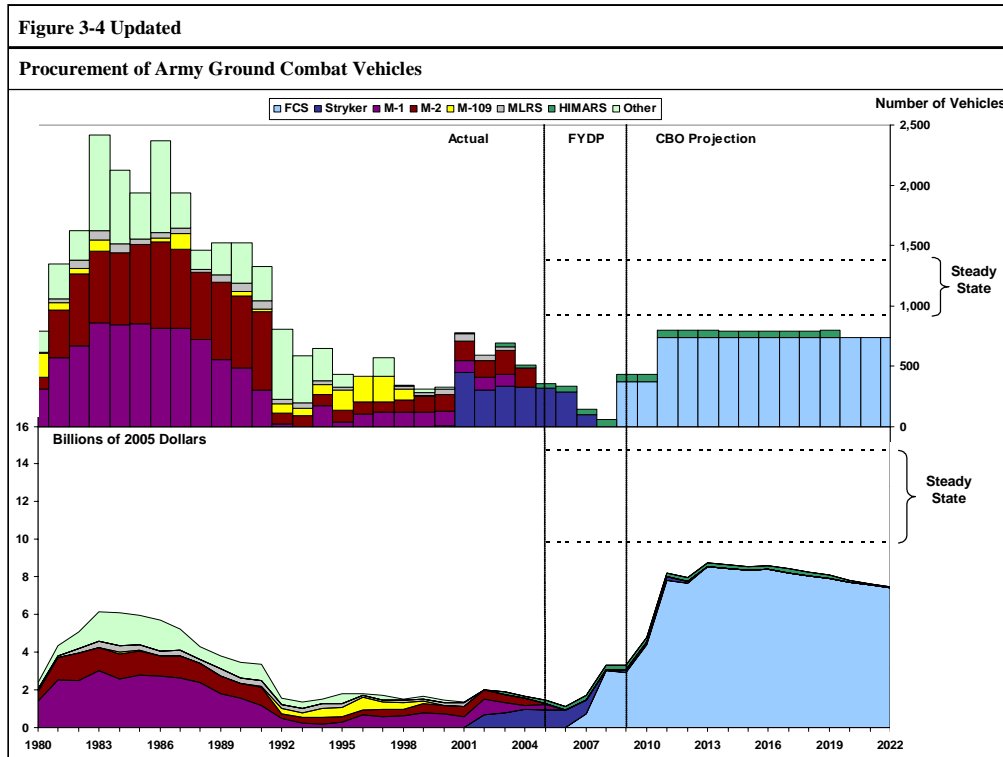
- Army investment averages \$23 billion, 15 percent of total DoD investment;
- Navy and Marine Corps investment averages \$53 billion, 33 percent of the total;
- Air Force investment averages \$57 billion, 36 percent of the total; and
- Investment in other defense activities averages \$27 billion, 17 percent of the total.

•During the period from 2010 to 2022 that CBO's projection spans, the share of investment resources allocated to the military services and to other defense activities is as follows:

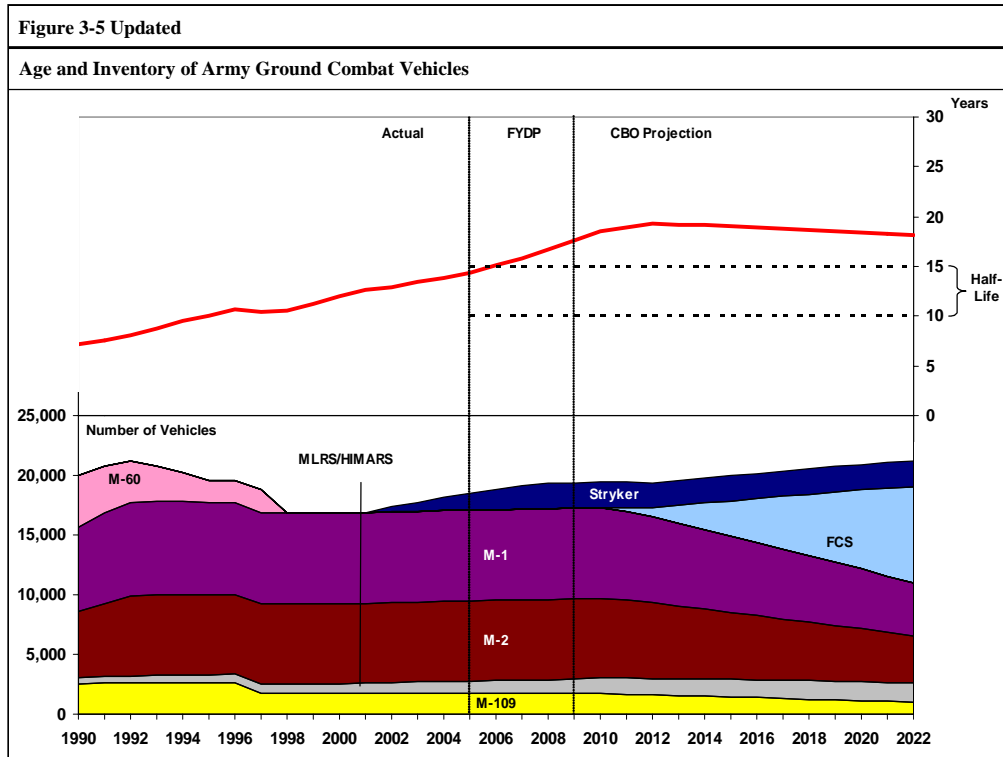
- Army investment averages \$38 billion, 21 percent of total DoD investment;
- Navy and Marine Corps investment averages \$48 billion, 27 percent of the total;
- Air Force investment averages \$68 billion, 38 percent of the total; and
- Investment in other defense activities averages \$24 billion, 14 percent of the total.



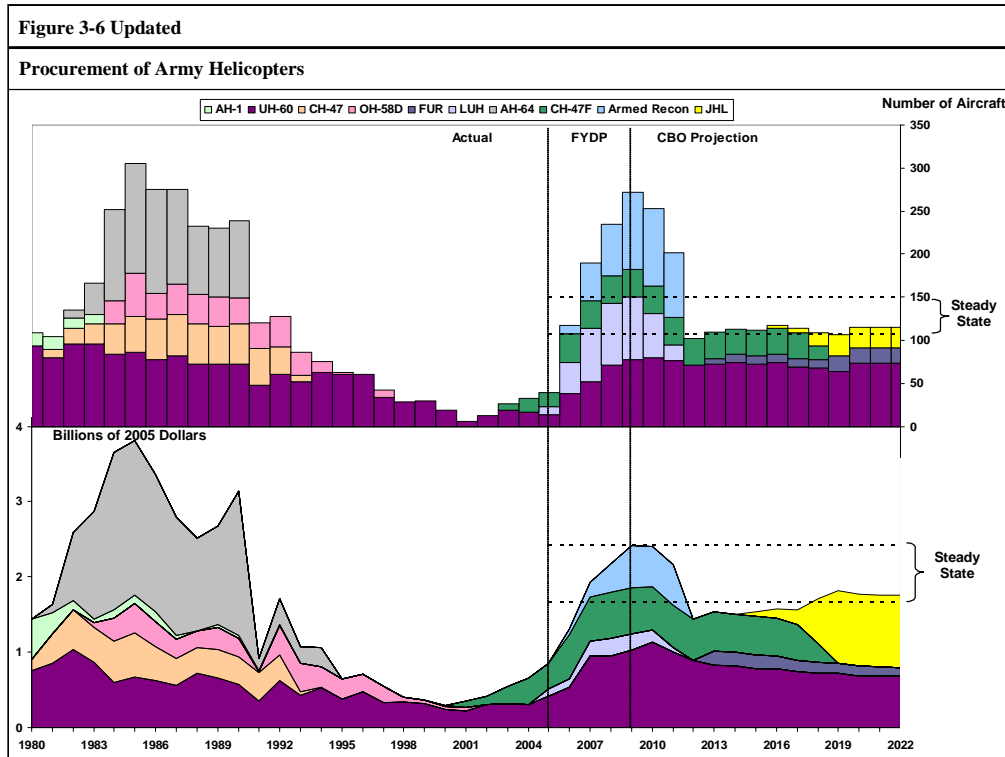
- This chart updates Figure 3-3 of CBO's February 2004 Web document. It depicts the Army's past overall level of investment and future investment plans.
- On the basis of those plans, CBO projects that the Army's investment spending would exceed its previous (1985) peak of \$34 billion in 2012, reach a new peak of \$42 billion in 2014, and then decline to about \$33 billion by 2022.
- CBO's projection of the Army's annual investment spending from 2010 to 2022 averages about \$38 billion. Investment levels remain about the same as in the February 2004 projection despite changes in the Army's plans, including:
  - Cancellation of the Comanche helicopter program and reinvestment of the released funds in other Army aircraft programs, and
  - A one-year delay in the start of procurement of the Future Combat System (FCS), which will replace current ground combat vehicles.



- This chart updates Figure 3-4 of CBO’s February 2004 Web document. It shows past and projected purchases of ground combat vehicles for the Army measured by the number of vehicles (the top part of the chart) and in billions of 2005 dollars (the bottom part of the chart).
- The “Other” category includes vehicles such as the M88 recovery vehicle, the Field Artillery Ammunition Supply Vehicle (FAASV), and the M113 armored personnel carrier.
- Purchases of ground combat vehicles during the 1990s averaged 480 a year, roughly one-third of the upper end of the range of steady-state purchases needed to sustain the fleet indefinitely.
- The FCS program—a key element of the Army’s transformation plans—included in the President’s 2005 budget would:
  - Purchase the first FCS vehicles for the Army’s brigades in 2009;
  - Purchase enough FCS vehicles to equip two brigades a year beginning in 2011, and
  - Equip all of the Army’s brigades with elements of the FCS by 2045.
- The projected annual procurement rate of almost 800 FCS vehicles would not be sufficient to maintain the combat vehicle fleet in a steady state.
- The Army’s current plans differ from its 2004 plans by delaying the purchase of the first brigade set of FCS vehicles by one year.



- This chart updates Figure 3-5 of CBO's February 2004 Web document. It shows the age (top part of the chart) and inventory (bottom part of the chart) of the Army's ground combat vehicles.
- The Army has not purchased enough combat vehicles during the past 14 years to prevent the ground combat fleet as a whole from aging. Indeed, the fleet's average age has risen almost steadily since 1990. It is currently about 14 years—roughly double what it was in 1990.
- Deliveries of new vehicles will not be sufficient to arrest aging until substantial numbers of FCS vehicles begin to enter the fleet in 2012, at which point the average age of the fleet should peak at about 19 years. After that, the average age of the fleet declines continuously but remains above the upper bound of the target half-life range for ground combat vehicles for the rest of the projection period.
- Those findings are essentially the same as in CBO's February 2004 projection.

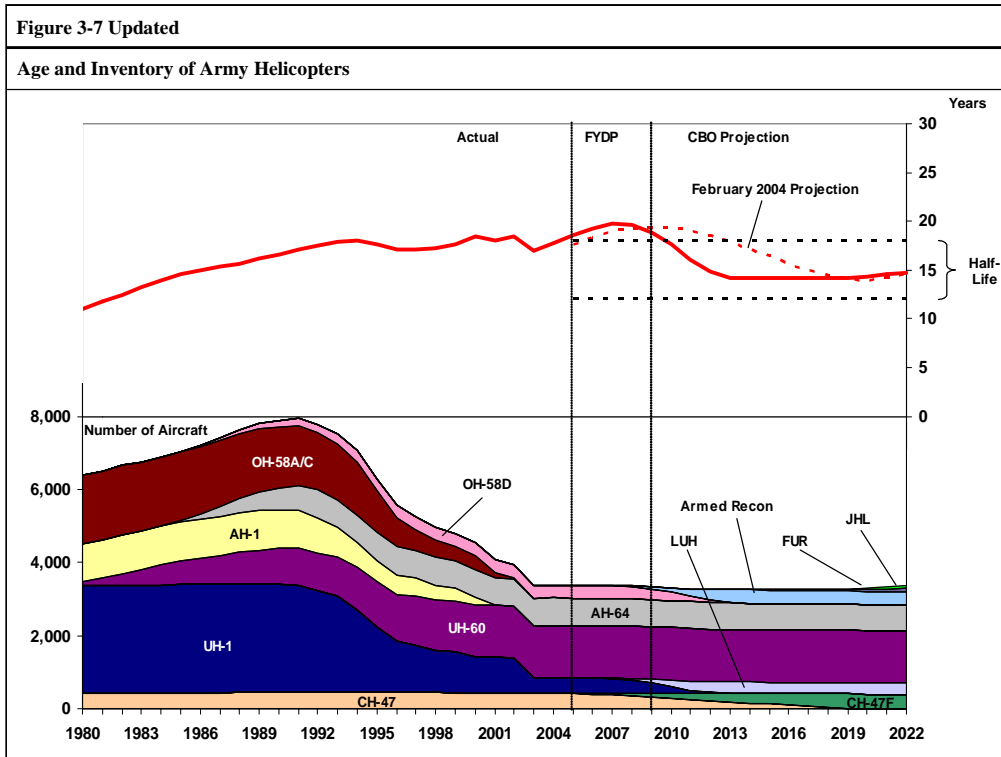


- This chart updates Figure 3-6 of CBO’s February 2004 Web document. It shows past and projected purchases of Army helicopters by the number of helicopters (the top part of the chart) and funds invested in billions of 2005 dollars (the bottom part of the chart).

- The Army plans to increase its annual purchases of new and remanufactured helicopters from 33 in 2004 to 272 by 2009, with a corresponding increase in funding during that period. Annual purchases are slated to decline after that, but they would remain relatively steady at about 110 from 2012 to the end of CBO’s projection period.

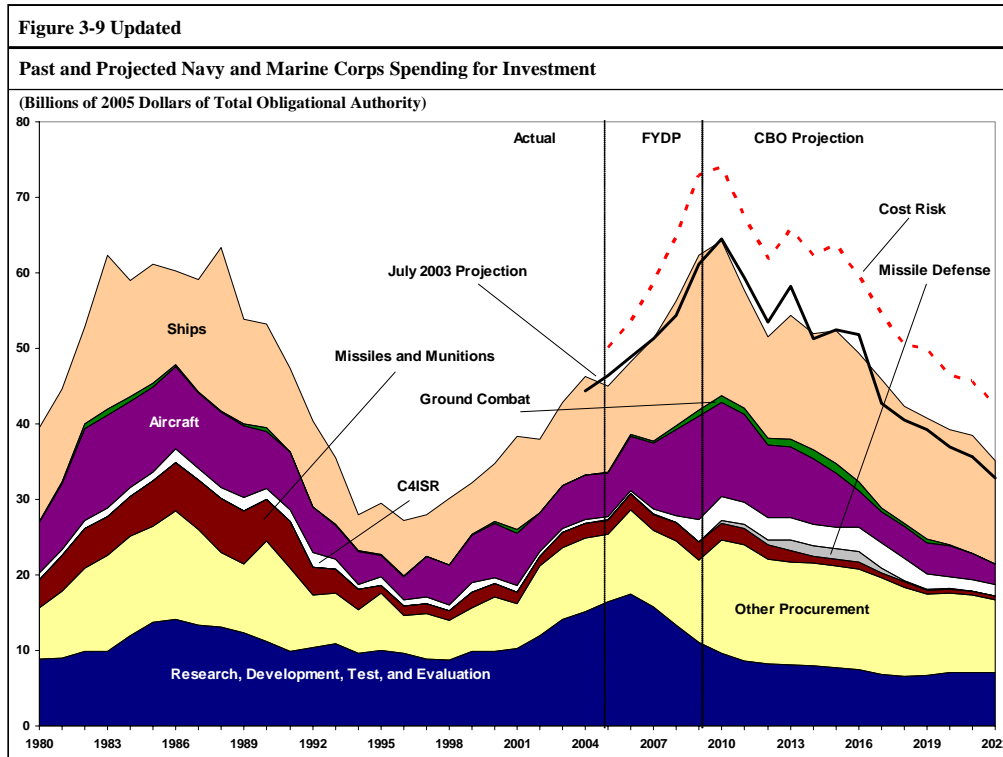
- The most significant change in helicopter procurement that the Army made between its 2004 and 2005 budget plans was to cancel the Comanche program and initiate several new programs in its place, including:

- A future utility rotorcraft (FUR),
- An armed reconnaissance helicopter,
- A light utility helicopter (LUH), and
- Tentative plans for a joint heavy-lift (JHL) helicopter.



- This chart updates Figure 3-7 of CBO’s February 2004 Web document. It shows the age (top part of the chart) and inventory (bottom part of the chart) of the Army’s helicopters.
- Although the Army has bought few helicopters recently, it has retired a large number of older helicopters as it has reduced its total helicopter inventory to less than half the size of the late 1980s and early 1990s. Those retirements have allowed the average age of the helicopter fleet to remain within or close to the target half-life range.
- Beginning around 2008, projected deliveries of new armed reconnaissance and utility helicopters will cause the average age of the fleet to stabilize, decline, and then stabilize again.
- The average age of the Army’s helicopter fleet declines more rapidly in this projection than in CBO’s February 2004 projection because the Army’s new plans introduce more new helicopters into the fleet, and introduce them sooner, than the Comanche program would have done.





- This chart updates Figure 3-9 in CBO's February 2004 Web document. The 2005 FYDP and CBO's current projection envision providing greater investment resources to the Department of the Navy (which includes the Marine Corps) through 2016 than did CBO's February 2004 projection.

- Current plans would increase Navy investment from \$45 billion in 2005 to a peak of about \$64 billion in 2010. After that, investment resources would gradually decline to \$35 billion by 2022, averaging about \$48 billion a year between 2010 and 2022.

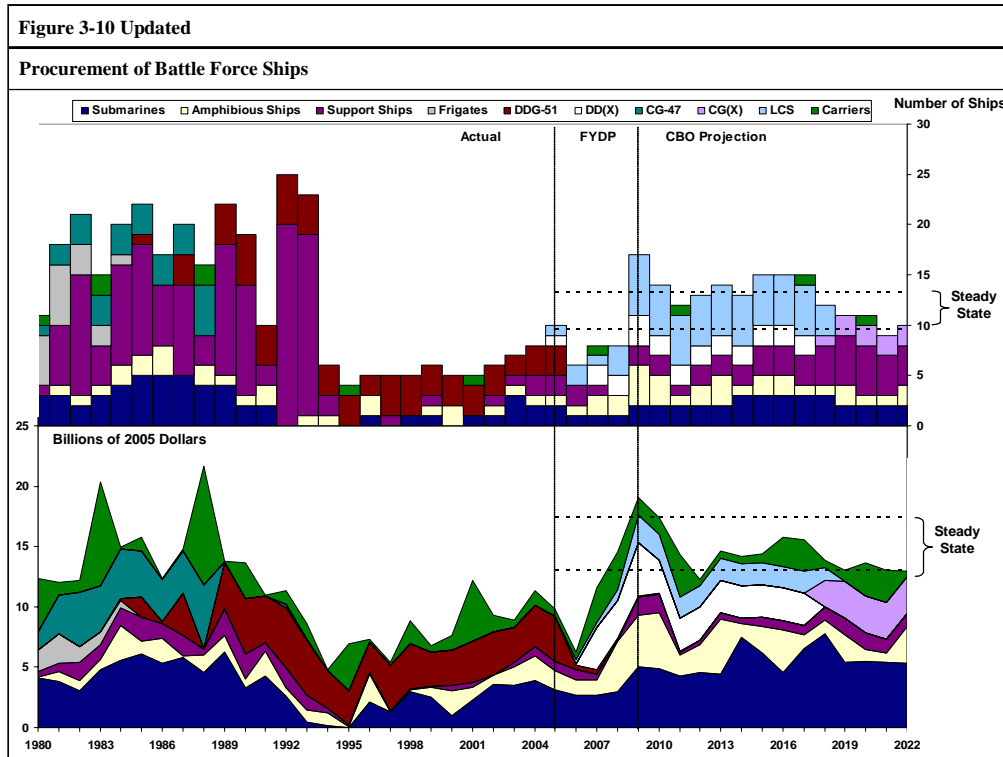
- If costs grow as they have in the past, however, the Navy's investment spending could rise to a peak of about \$74 billion in 2010, average \$57 billion a year between 2010 and 2022, and then fall back to about \$43 billion by the end of the period.

- In the President's budget, the Navy's planned annual shipbuilding grows from nine to 17 ships a year between 2005 and 2009. Under the 2004 FYDP, the Navy had planned to buy 45 ships during the 2005-2009 period. Under the 2005 FYDP, the Navy plans to buy 48 ships over those five years.

- For 2005, the President requested five surface combatants, one attack submarine, one amphibious ship, and two support ships.

- The Marine Corps's plans for items purchased through its procurement account changed little between the 2004 and 2005 FYDPs.

- Plans to invest heavily in ground combat vehicles (such as the new Expeditionary Fighting Vehicle and the Future Light Combat Vehicle) to replace the service's current inventory of aging equipment will require substantial resources over the next 20 years.



- This chart updates Figure 3-10 of CBO's February 2004 Web document. It shows past and projected purchases of battle force ships for the Navy measured by the number of ships (the top part of the chart) and in billions of 2005 dollars (the bottom part of the chart).

- CBO's projection anticipates an increase in ship purchases because of the Navy's plan to enlarge the fleet from about 300 ships today to 373 ships by 2022.

- Most of the planned increase occurs in the surface combatant force, with the purchase of 50 to 60 littoral combat ships (LCSs).

- Increases in desired capabilities for LHA(R) and MPF(F) amphibious ships also contribute to increased funding for shipbuilding.

- The Navy anticipates that the CVN-21 aircraft carrier class will cost, on average, about \$2 billion more per ship than the Nimitz class that it is replacing.

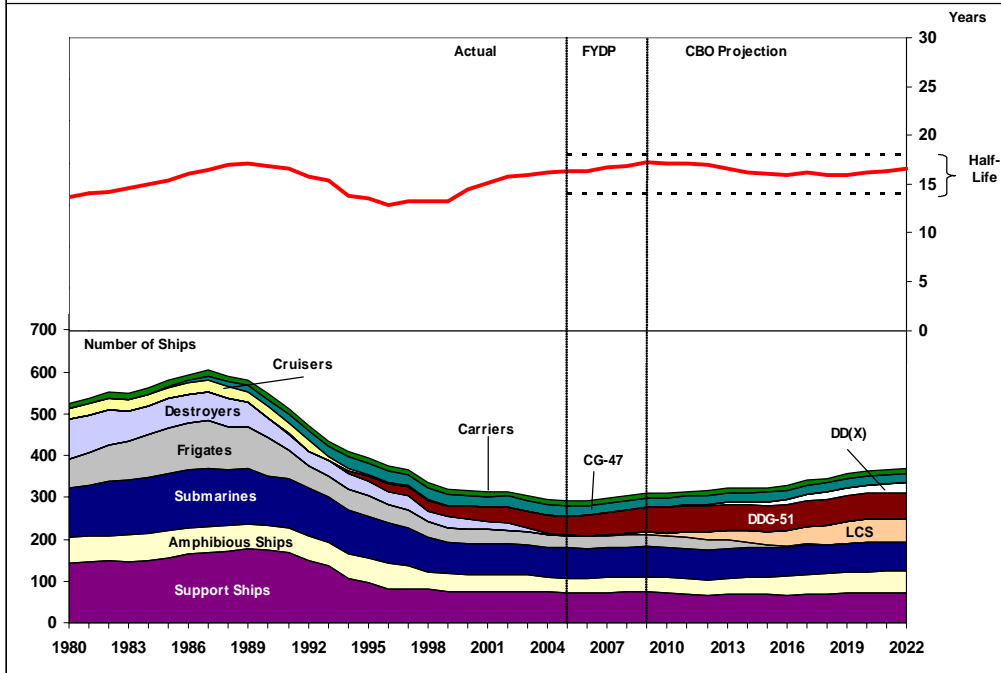
- Under the 2004 FYDP, the Navy planned to buy one DD(X) destroyer a year between 2005 and 2007. Under the 2005 FYDP, the Navy plans to buy two DD(X)s in 2007 and none in 2006. However, while providing the requested amount of money for the 2005 DD(X), the Congress delayed its authorization to a future year.

- Under the 2005 FYDP, the Navy plans to buy 13 LCSs between 2005 and 2009, an increase of four compared with the same time period under the 2004 plan.

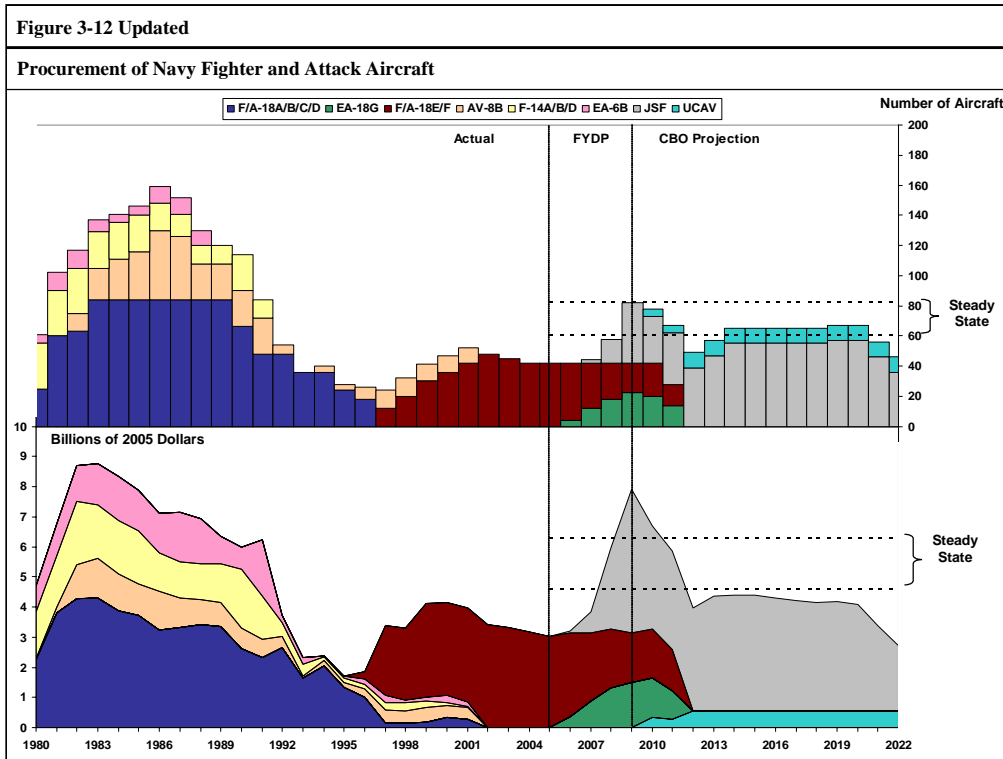
- Doubts about the affordability of the shipbuilding program have led senior Navy officials to consider cutting a number of ship programs, including submarines, amphibious ships, surface combatants, and an aircraft carrier. Those cuts could save an average of about \$3 billion a year in shipbuilding funds over the 2010-2022 period.

Figure 3-11 Updated

Age and Inventory of Battle Force Ships



- This chart updates Figure 3-11 of CBO's February 2004 Web document. It shows the age (top part of the chart) and inventory (bottom part of the chart) of the Navy's battle force ships.
- Beyond 2009, the average age of the Navy's ship fleet is projected to remain stable at 16 to 17 years, which is comparable with what CBO projected in February 2004 and is within the target half-life value of 14 to 18 years.
- Planned purchases of the new LCS account for much of the increase in inventory and the stabilization in average fleet age.



- This chart updates Figure 3-12 of CBO's February 2004 Web document. It shows past and projected purchases of fighter and attack aircraft for the Navy and Marine Corps measured by the number of aircraft (the top part of the chart) and in billions of 2005 dollars (the bottom part of the chart).

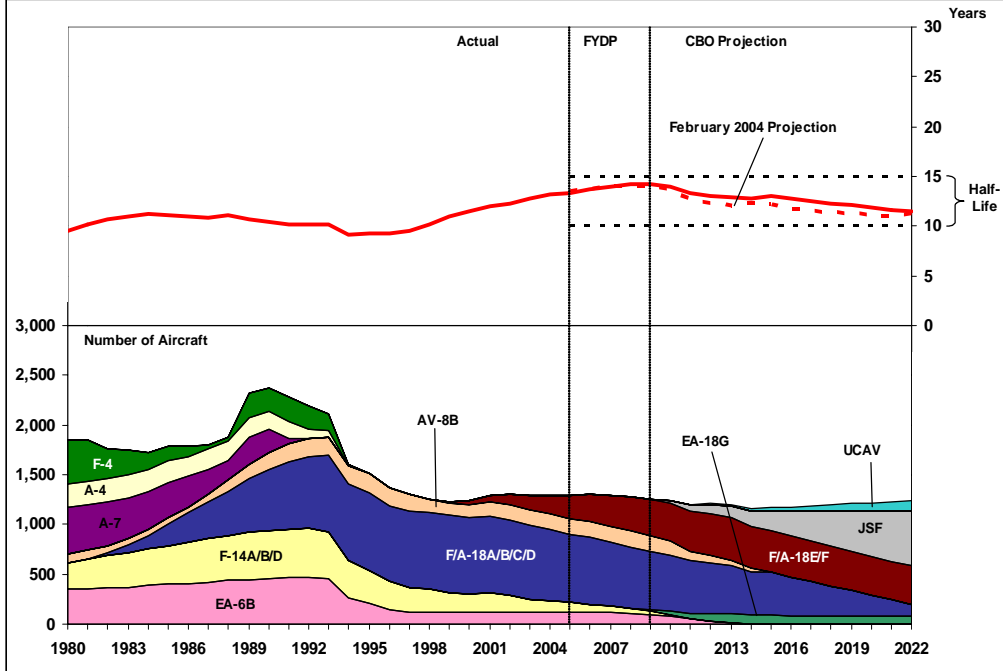
- Spending on procurement of tactical fighters will average about \$4.5 billion a year (without cost risk) in the 2005-2022 period, CBO projects.

- Although spending is lower than that average in most years of the projection, it is substantially higher from 2008 through 2011 because of simultaneous purchases of F/A-18E/F, EA-18G, and Joint Strike Fighter (JSF) aircraft.

- Under the 2005 FYDP, the schedule for the JSF has slipped by one year compared with the schedule in the 2004 FYDP. The total number of fighter and attack aircraft that the Navy plans to purchase between 2005 and 2009 has fallen by 37, of which 35 are attributable to the delay in the JSF schedule.

Figure 3-13 Updated

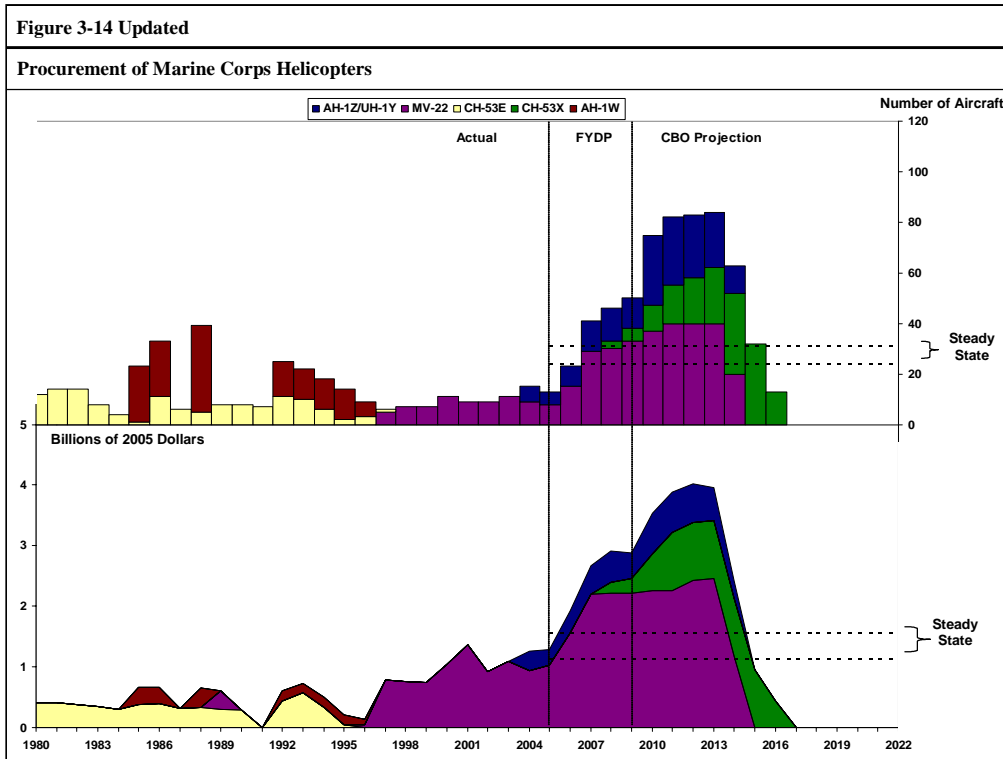
Age and Inventory of Navy Fighter and Attack Aircraft



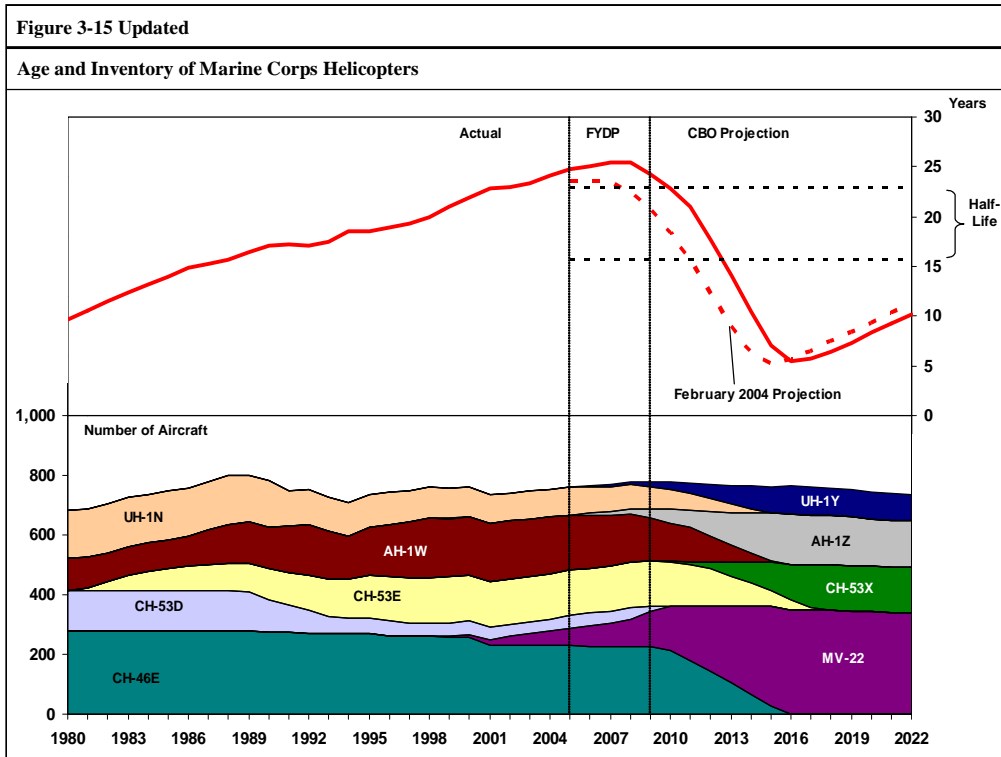
•This chart updates Figure 3-13 of CBO's February 2004 Web document. It shows the age (top part of the chart) and inventory (bottom part of the chart) of the Navy's and Marine Corps's fighter and attack aircraft.

•In CBO's February 2004 projection, the average age of the tactical aircraft fleet was slightly lower because of earlier JSF purchases. That difference disappears by the end of the projection period, when JSF purchases catch up with the previous plan.

•The average age of the Navy's fighter and attack aircraft fleet remains within the target half-life range of 10 to 15 years throughout the projection period.



- This chart updates Figure 3-14 of CBO's February 2004 Web document. It shows past and projected purchases of helicopters and tilt-rotor aircraft for the Marine Corps measured by the number of helicopters (the top part of the chart) and in billions of 2005 dollars (the bottom part of the chart).
- CBO's February 2004 projection assumed a service-life extension program for the CH-53E helicopter based on Marine Corps plans at that time. This CBO projection, which is based on new Marine Corps plans, replaces the CH-53E fleet with a new CH-53X helicopter with greater capability.
- Procurement of the V-22 tilt-rotor transport to replace the existing CH-46 fleet accounts for the majority of the funding projected for purchases of Marine Corps helicopters.



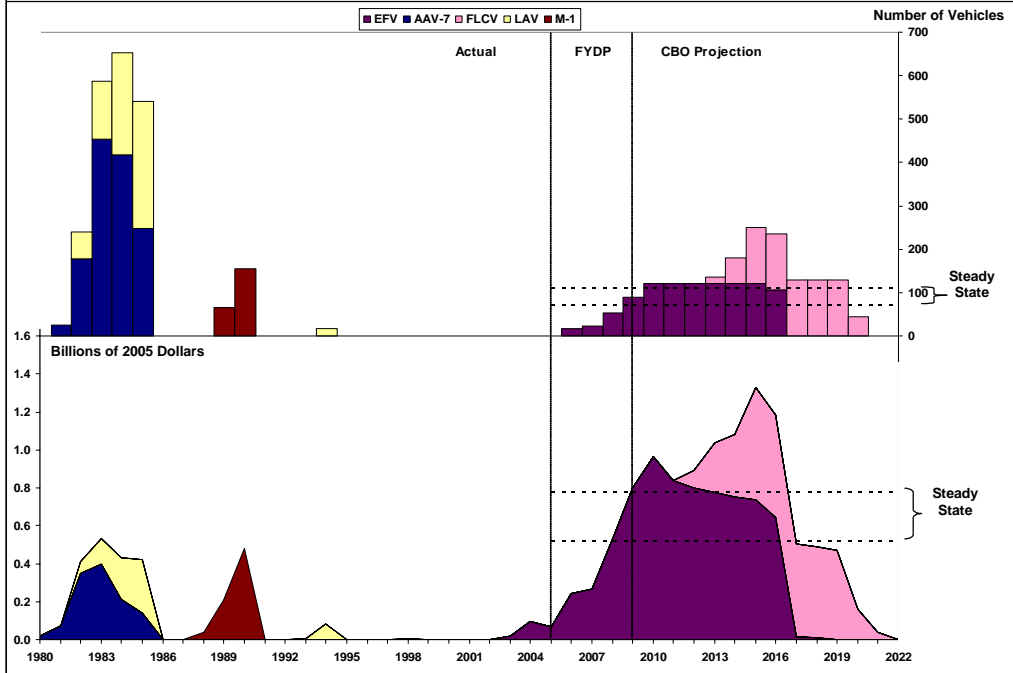
- This chart updates Figure 3-15 of CBO's February 2004 Web document. It shows the age (top part of the chart) and inventory (bottom part of the chart) of helicopters and tilt-rotor aircraft for the Marine Corps.

- Like CBO's February 2004 projection, the current projection envisions that the average age of the Marine Corps's helicopter fleet will begin to decline rapidly toward the end of the FYDP period with increasing deliveries of rebuilt and upgraded utility and attack helicopters and deliveries of the V-22.

- The average age of the helicopter and tilt-rotor fleet is higher than in the February 2004 projection because deliveries of new CH-53X helicopters will arrive later than the remanufactured CH-53E helicopters that CBO assumed in its February 2004 projection.

Figure 3-16 Updated

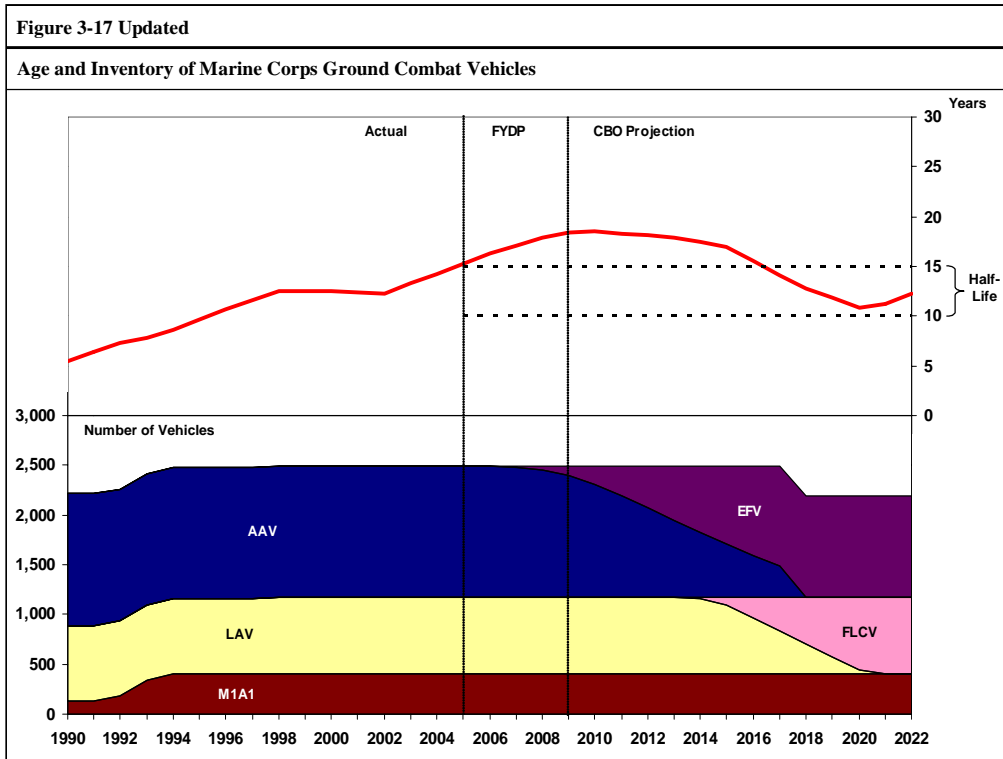
Procurement of Marine Corps Ground Combat Vehicles



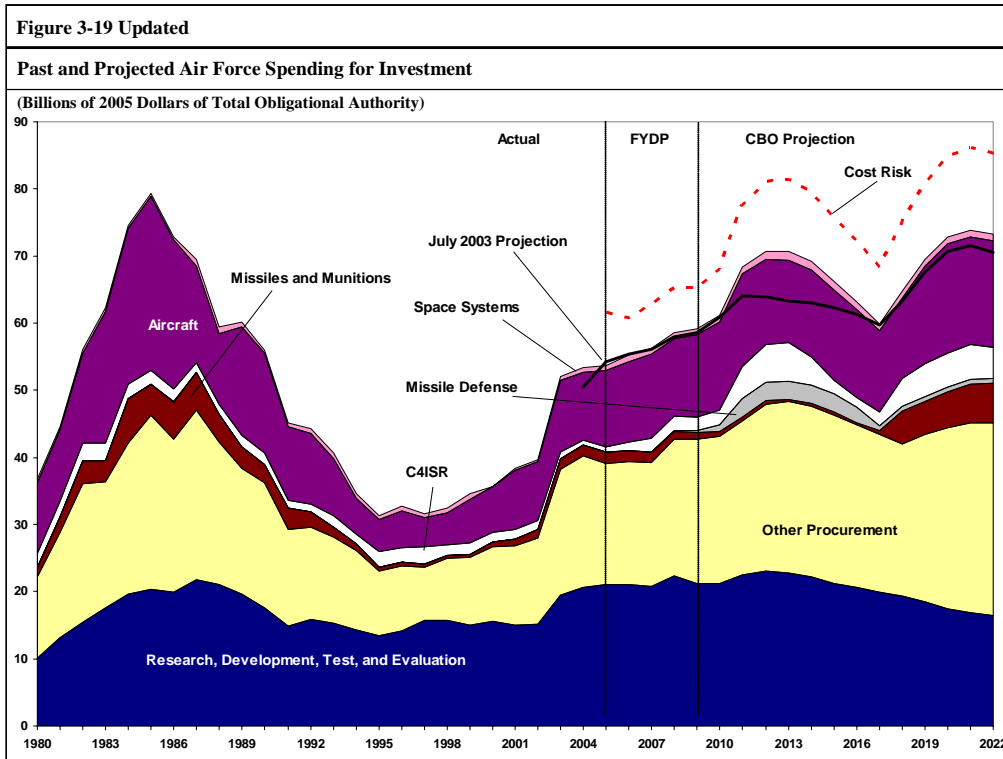
•This chart updates Figure 3-16 of CBO's February 2004 Web document. It shows past and projected purchases of ground combat vehicles for the Marine Corps measured by the number of vehicles (the top part of the chart) and in billions of 2005 dollars (the bottom part of the chart).

•There are no significant changes from CBO's February 2004 estimate. Projected purchases of the new Expeditionary Fighting Vehicle (EFV), which will replace the existing fleet of Amphibious Assault Vehicles (AAVs), account for the majority of procurement funding for the Marine Corps's ground combat vehicles.

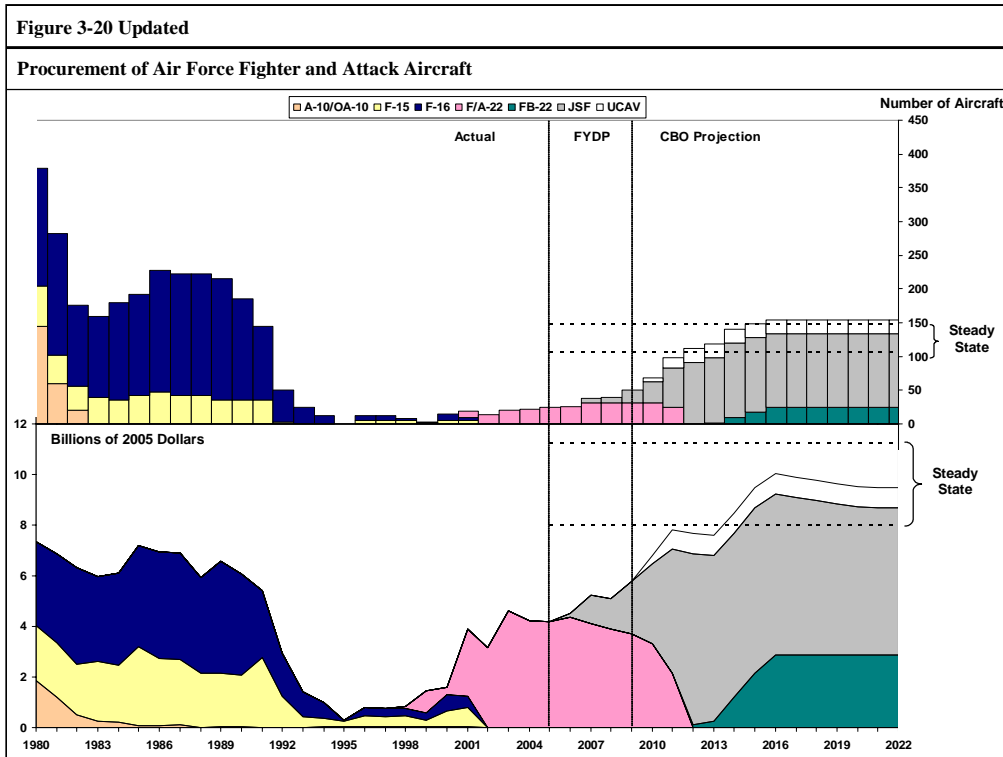




- This chart updates Figure 3-17 of CBO's February 2004 Web document. It shows the age (top part of the chart) and inventory (bottom part of the chart) of ground combat vehicles for the Marine Corps.
- There are no significant changes in the age or inventory of ground combat vehicles relative to CBO's February 2004 estimate.



- This chart updates Figure 3-19 of CBO's February 2004 Web document. The 2005 FYDP allocates approximately the same amount per year in investment resources to the Department of the Air Force as the 2004 FYDP did. Air Force investment increases from \$54 billion in 2005 to \$59 billion in 2009.
- CBO projects sustained increases in purchases of new tactical aircraft, reflecting continued production of the F/A-22 fighter through 2011 and the beginning of production of the JSF in 2007.
- Between 2010 and 2022, Air Force investment is higher in CBO's current projection than it was in the previous one, averaging \$68 billion annually (or \$78 billion a year with historical cost growth). Most of that increase results from higher projected costs for certain C4ISR programs.
- CBO projects that replacements for the current long-range bomber force and Minuteman III ICBM force will begin to be purchased in 2018. Those purchases contribute to the rise in projected investment resources near the end of the projection period.

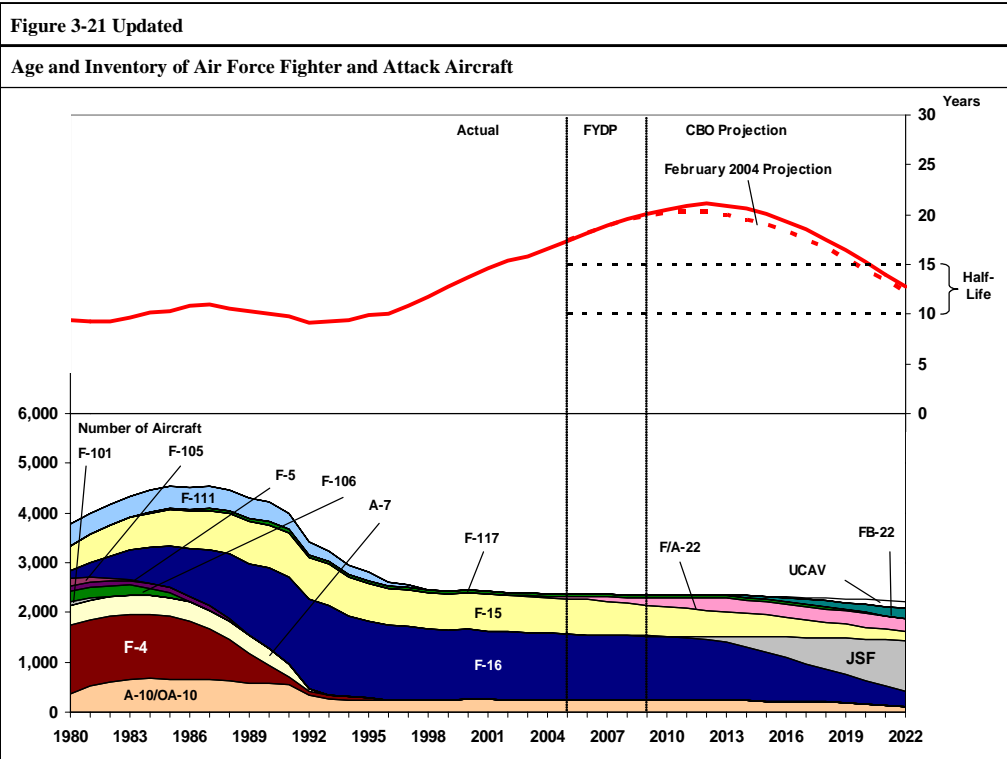


- This chart updates Figure 3-20 of CBO’s February 2004 Web document. It shows past and projected purchases of fighter and attack aircraft for the Air Force measured by the number of aircraft (the top part of the chart) and in billions of 2005 dollars (the bottom part of the chart).

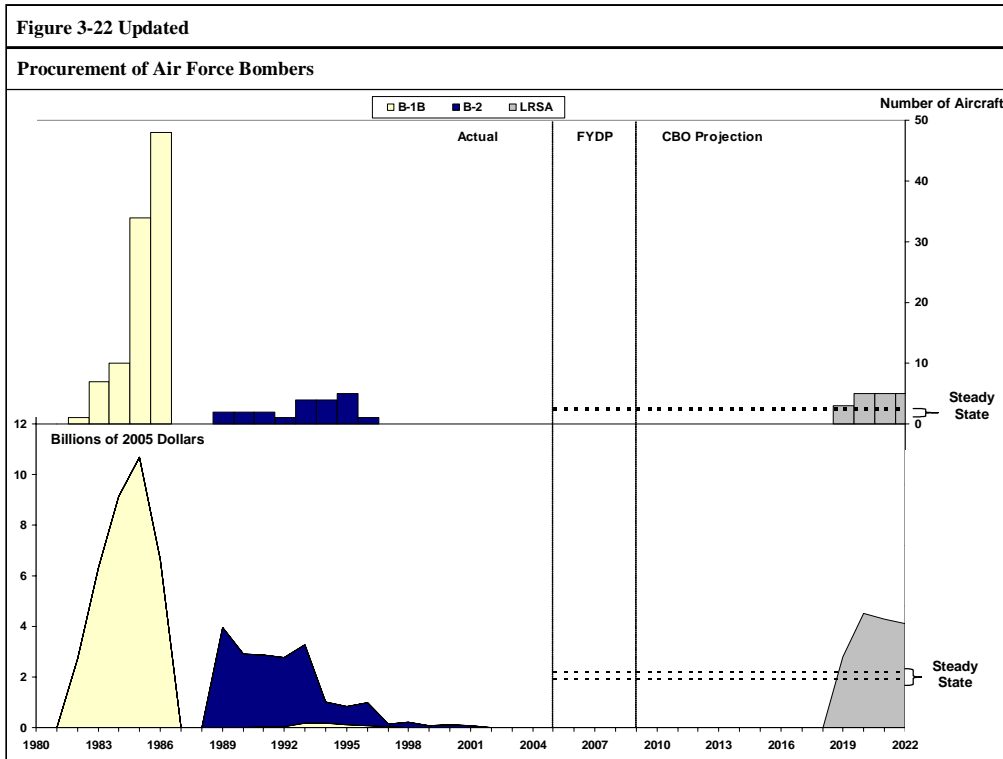
- JSF costs have increased since the February 2004 projection. During the FYDP period, total JSF funding has changed only slightly, although increased RDT&E costs are covered by deferring purchases to later years. Beyond the FYDP period, projected procurement costs for the JSF average about \$1 billion more annually than in the February 2004 projection. At the end of the projection period, the JSF inventory is nearly 100 aircraft smaller than in the February 2004 projection.

- CBO projects that purchase quantities for tactical aircraft will be within steady-state ranges beginning in 2014.

- Funding labeled as for the “FB-22” is intended to represent whatever system the Air Force selects to fill its recently articulated desire to field an interim long-range strike platform prior to developing a new long-range bomber. CBO’s projection assumes that the interim system is a derivative of the F/A-22.



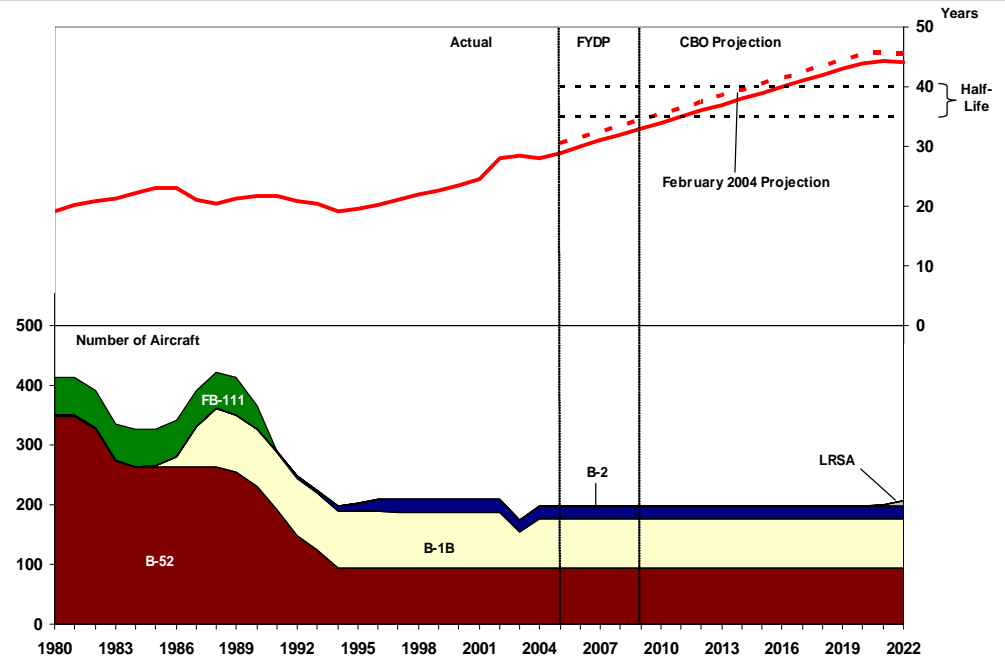
- This chart updates Figure 3-21 of CBO's February 2004 Web document. It shows the age (top part of the chart) and inventory (bottom part of the chart) of fighter and attack aircraft for the Air Force.
- CBO's updated projection of the average age of Air Force tactical aircraft is similar to its February 2004 projection. The slight increase in the fleet's average age results from the deferred JSF purchase described on the previous chart.
- The fleet's average age is within the target half-life range of 10 to 15 years in the final years of the projection period, once substantial numbers of JSFs have been delivered.



- This chart updates Figure 3-22 of CBO's February 2004 Web document. It shows past and projected purchases of bombers for the Air Force measured by the number of aircraft (the top part of the chart) and in billions of 2005 dollars (the bottom part of the chart).
- CBO projects that a new long-range strike aircraft (LRSA) will begin to be produced in 2019. The LRSA might either augment the existing fleet of B-52, B-1, and B-2 long-range bombers, or it might replace portions of the existing fleet.
- There are no significant changes relative to CBO's February 2004 projection.

Figure 3-23 Updated

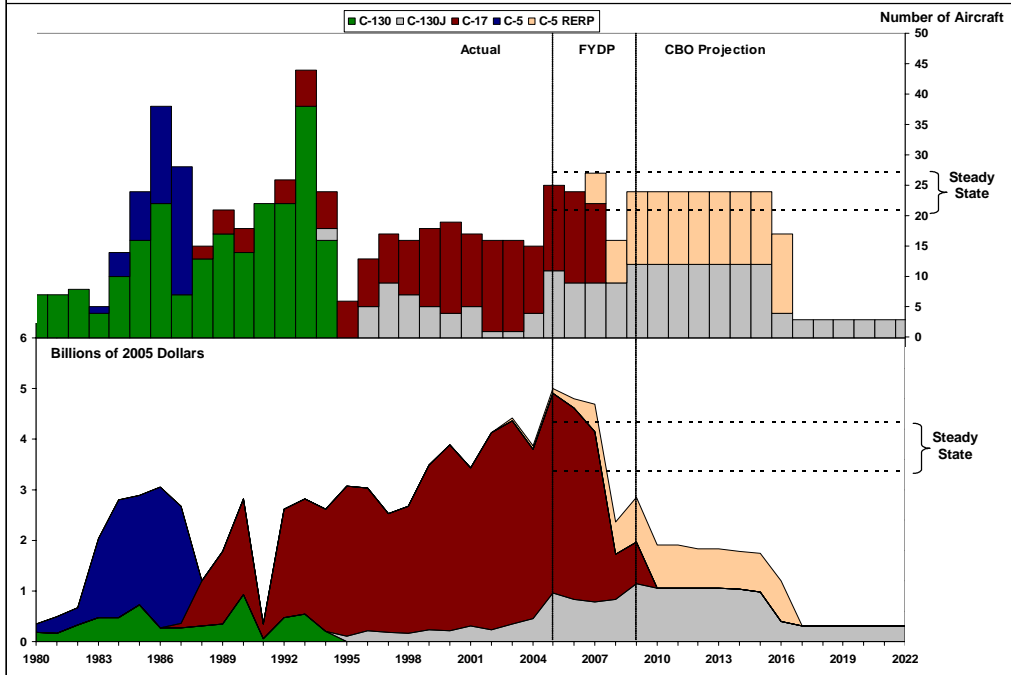
Age and Inventory of Air Force Bombers



- This chart updates Figure 3-23 of CBO's February 2004 Web document. It shows the age (top part of the chart) and inventory (bottom part of the chart) of bombers for the Air Force.
- The projection reflects efforts to restore some of the B-1B force that the Air Force retired in 2003. That restoration reduces the projected average age of the fleet compared with the February 2004 projection.

Figure 3-24 Updated

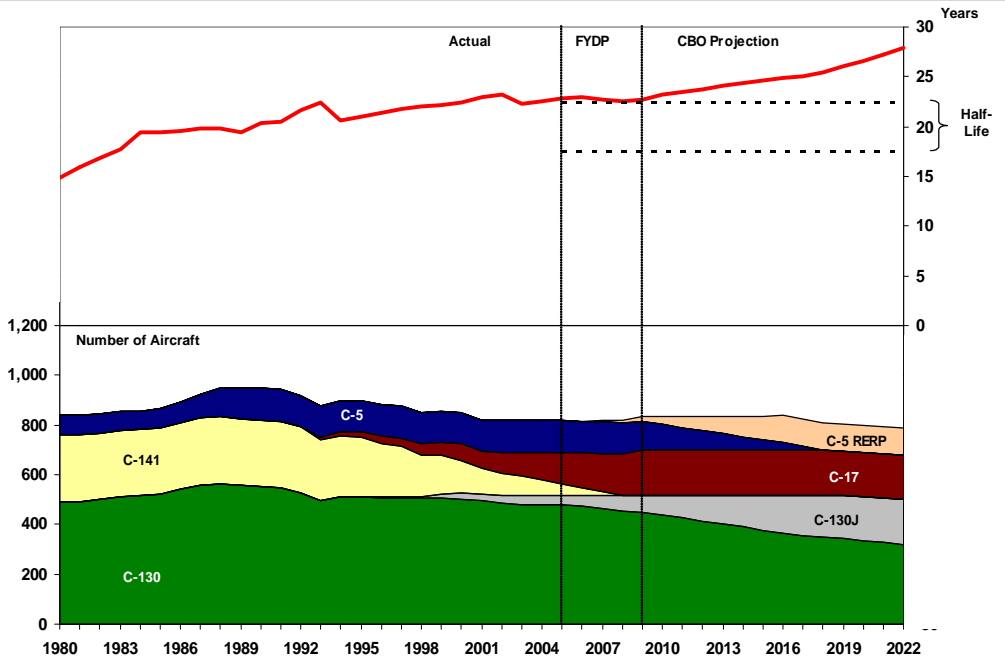
Procurement of Air Force Airlifters



- This chart updates Figure 3-24 of CBO's February 2004 Web document. It shows past and projected purchases of airlifters for the Air Force measured by the number of aircraft (the top part of the chart) and in billions of 2005 dollars (the bottom part of the chart).
- The projection assumes that C-17 production will end at 180 aircraft and that the entire C-5 fleet will be modernized with new engines.
- There are no significant changes relative to CBO's February 2004 projection.

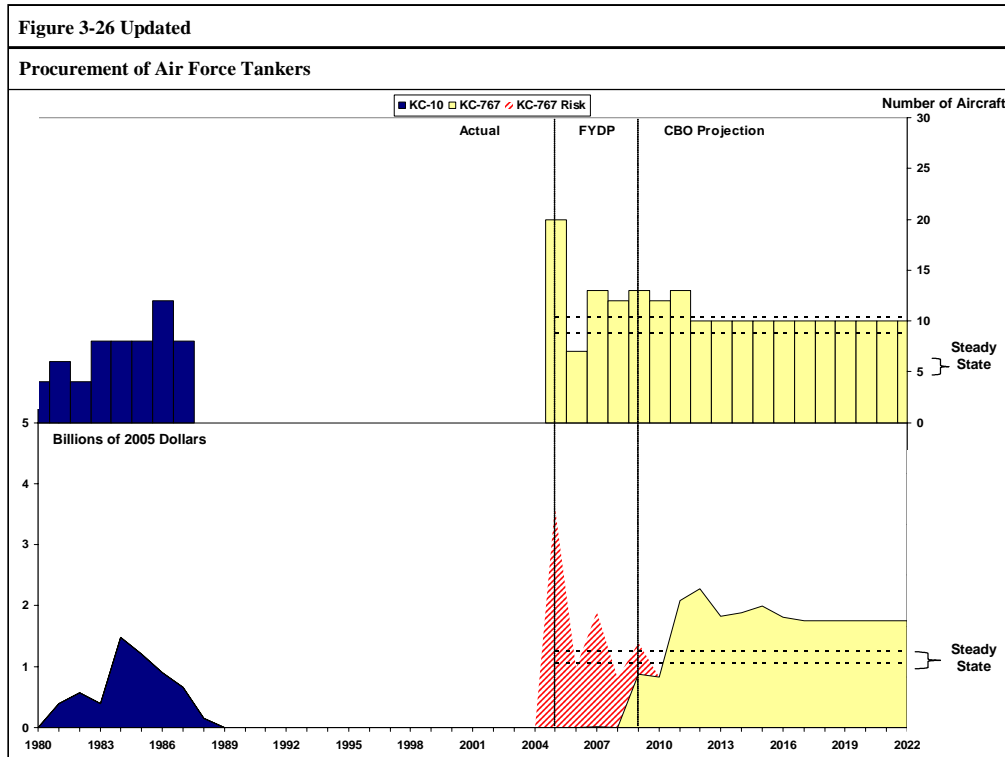
Figure 3-25 Updated

Age and Inventory of Air Force Airlifters

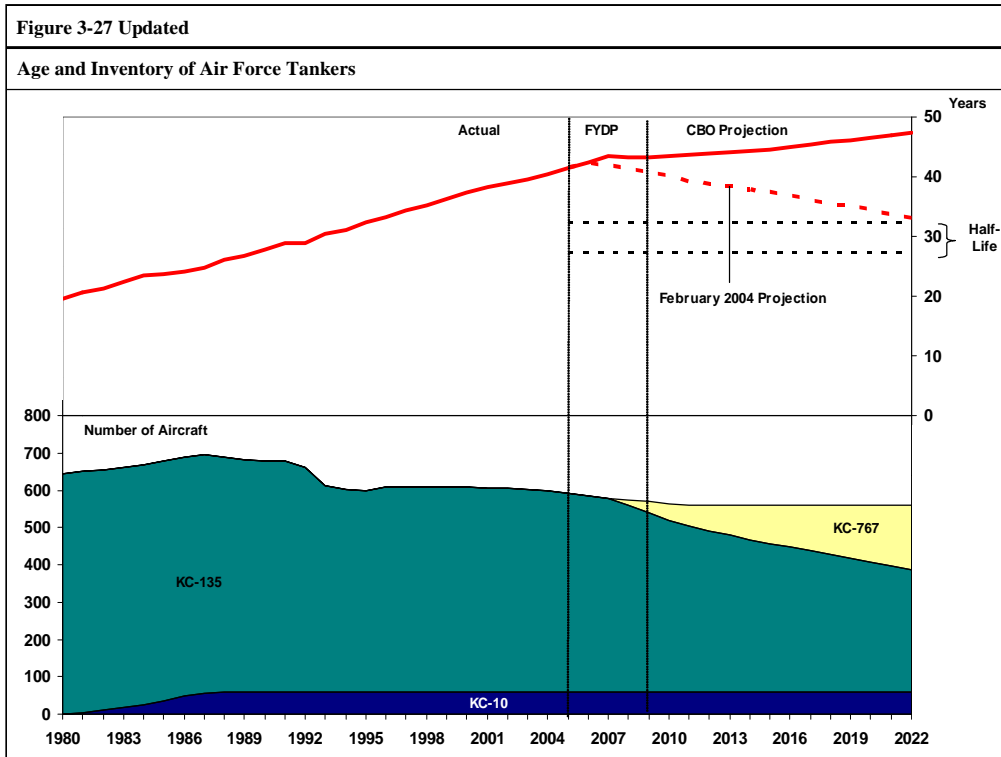


- This chart updates Figure 3-25 of CBO's February 2004 Web document. It shows the age (top part of the chart) and inventory (bottom part of the chart) of airlifters for the Air Force.
- There are no significant changes relative to CBO's February 2004 projection.

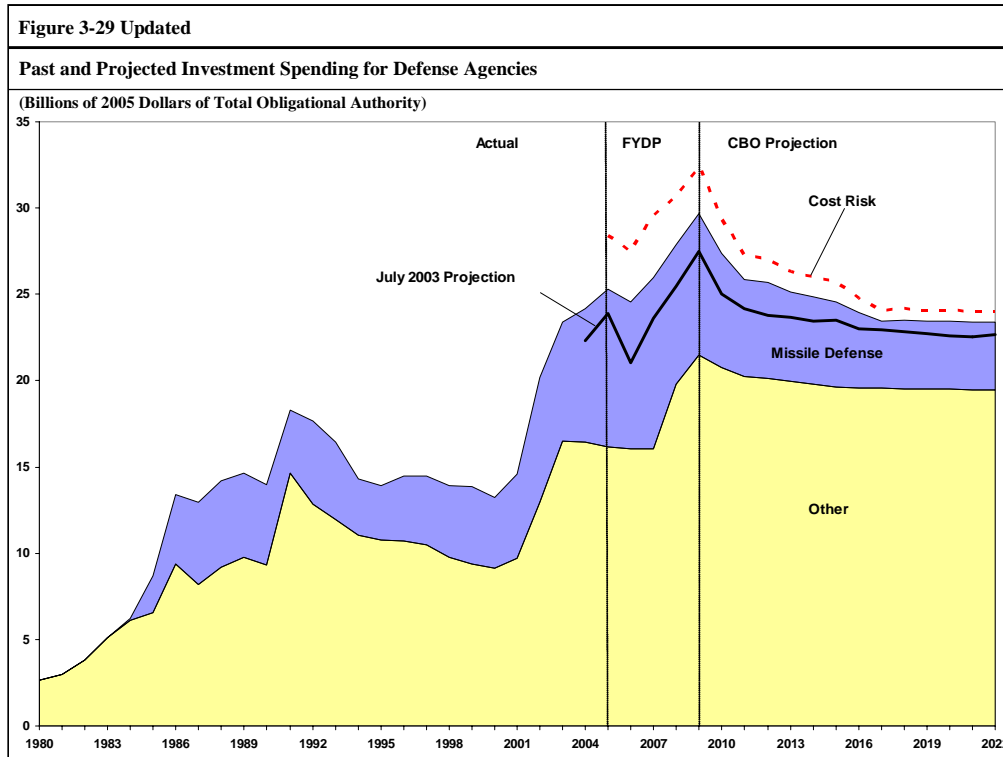




- This chart updates Figure 3-26 of CBO's February 2004 Web document. It shows past and projected purchases of tankers for the Air Force measured by the number of aircraft (the top part of the chart) and in billions of 2005 dollars (the bottom part of the chart).
- CBO's February 2004 projection (which was based on DoD plans announced in 2003) assumed that new KC-767 tankers would be leased beginning in 2006 and that leases would continue through (and beyond) 2022 until all existing tankers had been replaced with KC-767s.
- DoD is currently conducting an analysis of alternatives to determine a future course for tanker modernization. The 2005 FYDP does not include substantial funds for tanker modernization until 2008.
- For this projection, CBO assumes (on the basis of a Senate proposal) a 20/80 lease/buy program for the first 100 new tankers beginning in 2005. Additional tankers thereafter would be obtained through purchases at a rate of 10 per year.
- Because this earlier tanker modernization plan is not included in the FYDP, its potential costs through 2009 are shown as risk (the red and white striped area) in this chart.
- Funding labeled as for the "KC-767" is based on cost estimates for a KC-767 fleet. That estimate is intended to represent whatever option the Air Force selects to modernize its tanker fleet. Other options could require different funding levels.



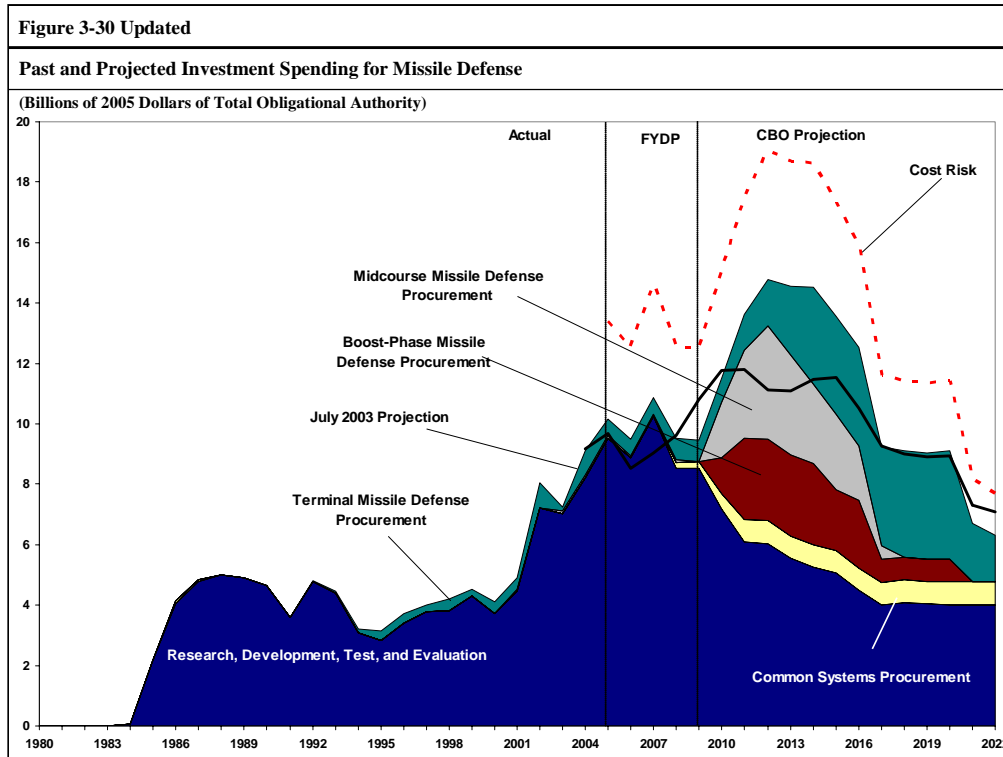
- This chart updates Figure 3-27 of CBO's February 2004 Web document. It shows the age (top part of the chart) and inventory (bottom part of the chart) of tankers for the Air Force.
- In CBO's current projection, the average age of the tanker fleet does not decline, as it did in the February 2004 projection, because fewer tankers are purchased each year.
- Funding labeled as for the "KC-767" is intended to represent whatever option the Air Force selects to modernize its fleet.



- This chart updates Figure 3-29 of CBO's February 2004 Web document. The Defense Department's budget provides money for a variety of specialized agencies responsible for performing advanced research, developing missile defenses, overseeing special operations, and developing and managing information systems.

- The investment funding allocated to those activities in the 2005 FYDP averages about \$2 billion more per year for the 2005-2009 period than it did in the previous FYDP. Under DoD's current plans, funding would increase from \$25 billion in 2005 to \$30 billion in 2009. The majority of that increase is slated to occur between 2007 and 2009 in funding for unspecified activities related to military transformation.

- CBO projects that if current plans were carried out, defense agencies would spend an average of \$24 billion a year on investment between 2010 and 2022 (excluding cost risk), about 5 percent more than in CBO's previous projection. Most of that increase stems from CBO's assumption that a new program started by DoD last year to develop kinetic-energy interceptors (KEIs) to intercept ballistic missiles during the boost phase of flight (while their booster rockets are still burning) proceeds to production and deployment.



- This chart updates Figure 3-30 of CBO's January 2003 study. In CBO's projection, total investment in missile defense peaks in 2012 at about \$15 billion and then decreases as systems finish procurement and become operational. If costs grow as they have historically, however, pursuing the programs in CBO's missile defense projection would cost an additional \$4 billion a year, on average, peaking at about \$19 billion in 2012.

- The Missile Defense Agency is scheduled to deploy the Initial Defense Capability (IDC) of the Ground-Based Midcourse Defense (GMD) system by the end of the calendar year. CBO assumes that the IDC will be expanded subsequently with the deployment of additional interceptors and radars.

- CBO also assumes that DoD will deploy the Space Tracking and Surveillance System (STSS) by 2018. STSS will support missile defense activities with a 27-satellite constellation of space-based infrared sensors in low-Earth orbit.

- DoD has begun developing a boost-phase KEI system. The initial ground-based KEI system is slated to be fielded by 2014, with a follow-on system deployed by 2020.

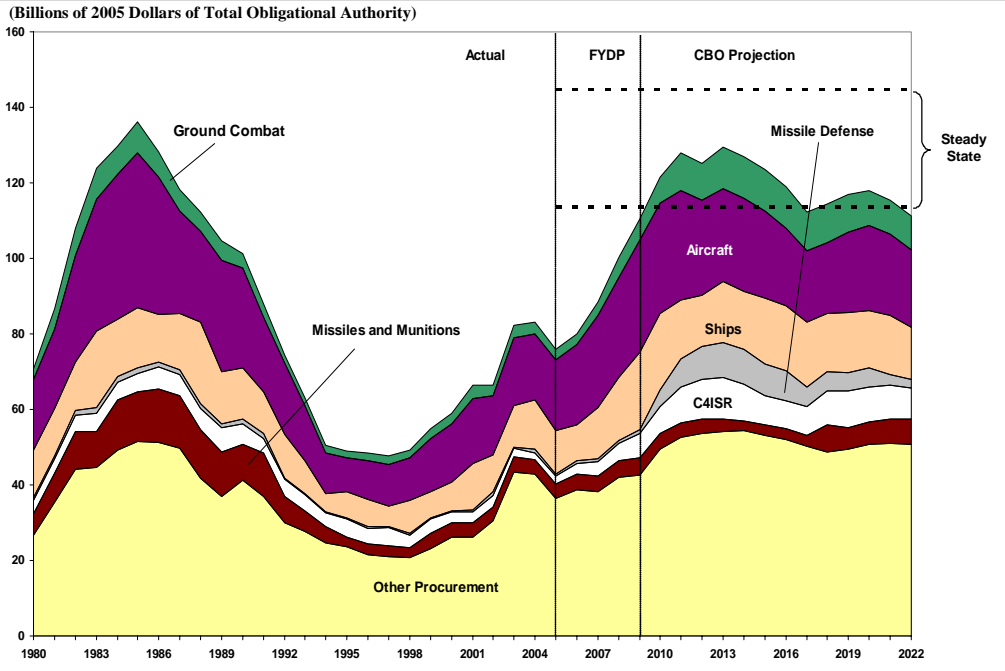
- The Airborne Laser (ABL) boost-phase system will consist of a high-energy chemical laser mounted in a Boeing 747 aircraft. CBO's projection assumes that seven ABL aircraft will be purchased through 2016.

- CBO's projection also includes the planned purchases of the Patriot Advanced Capability 3 (PAC-3) short-range missile defense system, as well as the eventual procurement of the Terminal High Altitude Area Defense (THAAD) System.

- CBO also projects that DoD will deploy an intermediate-range, sea-based missile defense system after 2010 using the Navy's Aegis cruisers and Standard Missile 3 (SM-3) interceptors.

Figure 3-31

Procurement Versus Steady-State Levels



•A way to measure the adequacy of planned purchases of military equipment is to compare them with steady-state levels (the procurement needed to sustain planned forces indefinitely). CBO estimated the annual level of steady-state purchases by dividing a planned inventory of weapon systems by the expected service life of those systems. Multiplying those steady-state purchases by the estimated unit costs of the various systems that DoD plans to buy yields an overall estimate of annual steady-state procurement costs. In making that calculation, CBO used two alternative estimates of service lives. One assumes DoD's current projections for service lives, which are generally longer than those planned for during the Cold War. The other uses the shorter service lives incorporated in DoD's Cold War-era planning.

•Using DoD's estimates for the unit costs of new equipment, CBO estimates that annual steady-state procurement funding for DoD ranges from \$114 billion to \$145 billion, corresponding to the assumption of longer or shorter service lives described above.

•DoD's planned procurement budgets for the 2005-2009 period are below CBO's estimates of the steady-state procurement costs needed to sustain currently planned forces. That is why the average ages of DoD's equipment generally rise through 2009.

•If current plans were carried out through the 2010-2022 period, procurement would be within the steady-state range (between the estimates with long and short service lives), CBO projects. That is why average ages for many weapon systems either remain constant or decline after 2010.

**Appendix**

**Acronyms and Abbreviations**

<b>AAV:</b> Amphibious Assault Vehicle	<b>JSTARS:</b> Joint Surveillance and Target Attack Radar System
<b>ABL:</b> Airborne Laser	<b>KEI:</b> kinetic-energy interceptor
<b>C4ISR:</b> command, control, communications, computers, intelligence, surveillance, and reconnaissance	<b>LAV:</b> Light Armored Vehicle
<b>CBO:</b> Congressional Budget Office	<b>LCS:</b> littoral combat ship
<b>DHP:</b> Defense Health Program	<b>LHA(R):</b> Landing Helicopter Assault (Replacement)
<b>DoD:</b> Department of Defense	<b>LRSA:</b> Long-Range Strike Aircraft
<b>ECI:</b> employment cost index	<b>LUH:</b> Light Utility Helicopter
<b>EFV:</b> Expeditionary Fighting Vehicle	<b>MLRS:</b> Multiple-Launch Rocket System
<b>FAASV:</b> Field Artillery Ammunition Supply Vehicle	<b>MPF(F):</b> Maritime Prepositioning Force (Future)
<b>FCS:</b> Future Combat System	<b>MUOS:</b> Mobile User Objective System
<b>FLCV:</b> Future Light Combat Vehicle	<b>O&amp;M:</b> operation and maintenance
<b>FUR:</b> Future Utility Rotorcraft	<b>O&amp;S:</b> operation and support
<b>FYDP:</b> Future Years Defense Program	<b>PAC-3:</b> Patriot Advanced Capability 3
<b>GCV:</b> Ground Combat Vehicle	<b>RDT&amp;E:</b> research, development, test, and evaluation
<b>GDP:</b> gross domestic product	<b>RERP:</b> Reliability Enhancement and Re-Engining Program
<b>GMD:</b> Ground-Based Midcourse Defense	<b>SLEP:</b> Service Life Extension Program
<b>HIMARS:</b> High-Mobility Artillery Rocket System	<b>STSS:</b> Space Tracking and Surveillance System
<b>ICBM:</b> Intercontinental Ballistic Missile	<b>THAAD:</b> Terminal High-Altitude Area Defense
<b>IDC:</b> Initial Defense Capability	<b>TOA:</b> total obligational authority
<b>JHL:</b> Joint Heavy Lift	<b>UCAV:</b> Unmanned Combat Air Vehicle
<b>JSF:</b> Joint Strike Fighter	