



June 29, 2019

Funding Implications of Impending Retirements of Air Force Aircraft

Annual Conference of the Western Economic Association International

Adebayo Adedeji
National Security Division

Outline

- **Project Background**
- The Demographics of Today's Air Force Fleet
- Projections of Future Aircraft Procurement
- Managing Procurement Costs in Peak Years

Military Aviation Does Not Traditionally Involve As Much Long-Run Planning As Shipbuilding

- Major shipbuilders have plans that extend for decades.
 - Historically, aviation time horizons have been somewhat shorter.

- However, some more recent aircraft development programs have taken many years, approaching time frames associated with shipbuilding.
 - Individual aircraft are being operated for longer periods, and their life spans are becoming more like those of ships.

- In this analysis, CBO projects out to 2050.

- CBO does not judge whether procurements are necessary or appropriate. Rather, the agency projects what the Air Force would procure if it retired aircraft at their estimated retirement dates and replaced retired systems with equal numbers of replacement aircraft (unless the Air Force has otherwise indicated that it will not to replace particular aircraft on a one-for-one basis).

A Long-Range Projection Can Provide Insights

- It promotes understanding of future procurement so that budget levels can be set appropriately, and it provides warning of pending procurement bulges (or troughs, although none of those appear for many years).

- It identifies key issues.
 - Example: The tangled fighter aircraft situation
 - Possible mitigation approaches

- But the value of this exercise has some limits.
 - Aviation technology can be relatively fast-moving, reducing the value of a long-range projection.

CBO's Methodology

- Use Selected Acquisition Reports (SARs) and other available Air Force plans for replacing aircraft.
 - Supplement those with CBO-developed quasi-SARs, e.g., for B-21 bombers and T-X trainers, where official SARs don't yet exist.
 - Develop modified SARs when Air Force experts have suggested that a SAR doesn't always reflect what they actually plan to do.

- For other systems lacking SARs, combine data on the current age structure of each fleet with estimated retirement ages to project when replacement aircraft would need to arrive.
 - Draw on data describing current aircraft in the Air Force's Reliability and Maintainability Information System (REMIS).

- Estimate total costs of procuring new aircraft by fiscal year.
 - CBO did not analyze operation and maintenance costs; research, development, test, and evaluation costs; or modification costs.

Outline

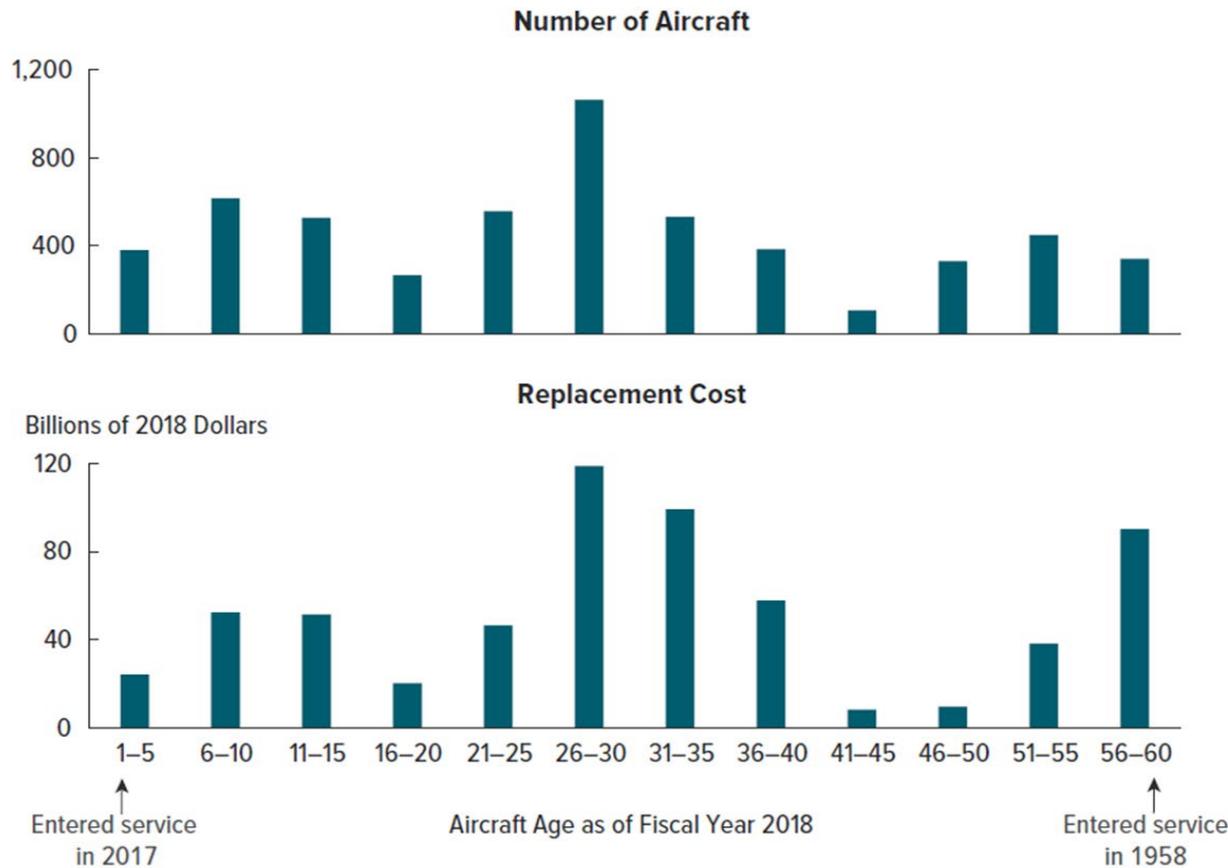
- Project Background
- **The Demographics of Today's Air Force Fleet**
- Projections of Future Aircraft Procurement
- Managing Procurement Costs in Peak Years

Projecting Replacements for Today's Air Force

- Some of the Air Force's newer aircraft will probably remain in service through 2050, so they won't be replaced during the span of this analysis.
- Other Air Force aircraft will grow too old to continue operating cost-effectively but are planned to be replaced by similar aircraft.
 - KC-46 tankers replace KC-135 and KC-10 tankers.
 - C-130Js (or a successor variant) replace older C-130 cargo aircraft.
- The Air Force has not specified its plans for replacing some other aircraft.
 - CBO's default assumption is that future aircraft will replace current aircraft but will remain broadly similar in capabilities and quantities.
 - CBO assumes that aircraft will be replaced when they reach specified retirement ages.

The Air Force Has a Concentration of Aircraft Acquired in the 1980s

Age and Replacement Cost of the Air Force's Fleet, 2018



Many of the aircraft in the current fleet entered service during the defense buildup that occurred during the 1980s.

The aircraft with the highest total replacement cost are about 30 years old (predominantly B-1Bs, F-15C/Ds, and F-16C/Ds).

Source: Congressional Budget Office, using data from the U.S. Air Force.

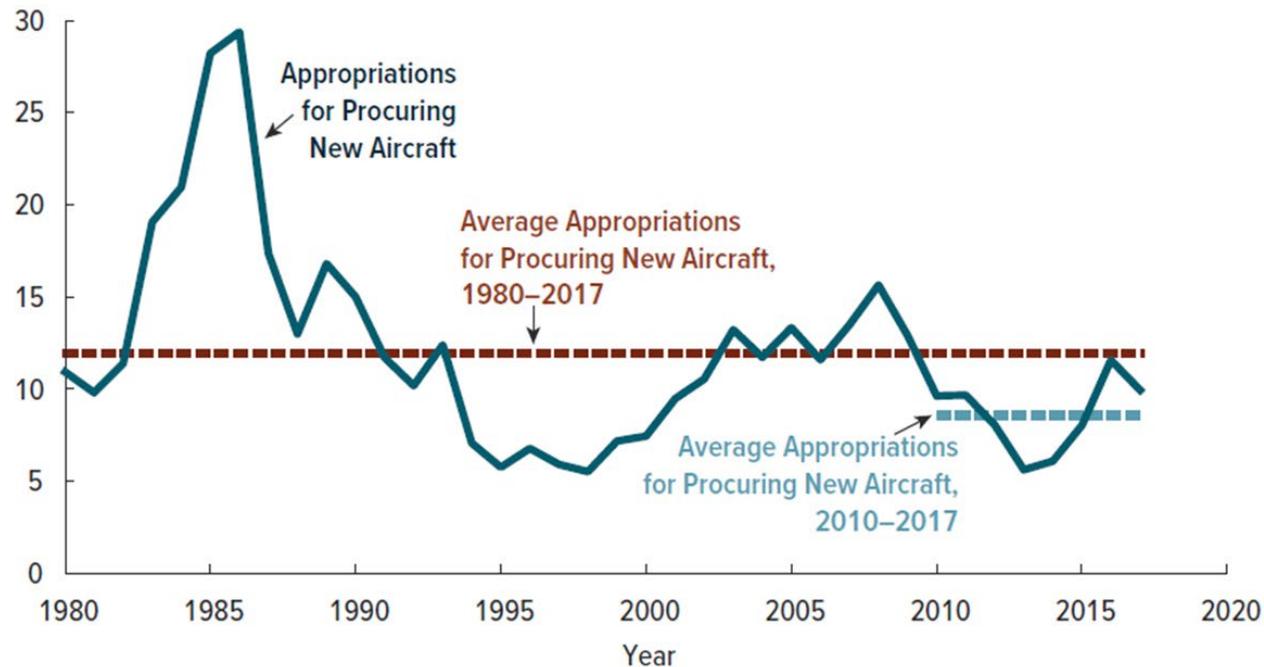
Outline

- Project Background
- The Demographics of Today's Air Force Fleet
- **Projections of Future Aircraft Procurement**
- Managing Procurement Costs in Peak Years

The Air Force's Budget for Procuring New Aircraft Peaked in 1986, With a Trough in the Late 1990s

The Air Force's Appropriations for Procuring New Aircraft, 1980–2017

Billions of 2018 Dollars



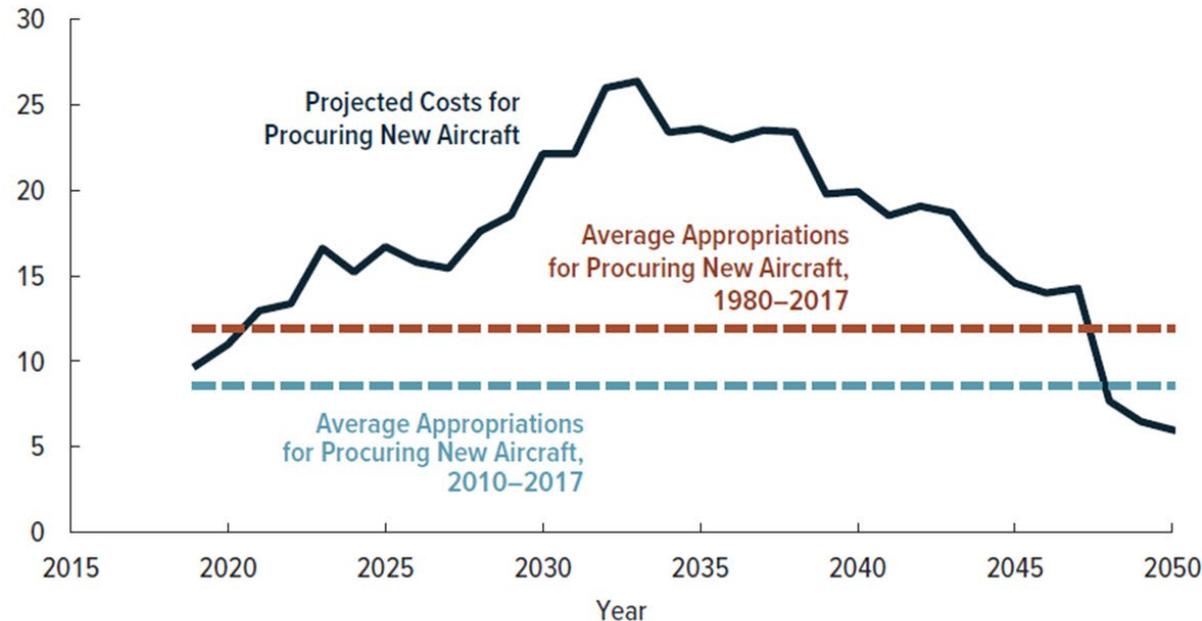
The Air Force's appropriations for procuring new aircraft rose in the 2000s (but did not approach the peak seen in the 1980s) and then fell in the 2010s.

Source: Congressional Budget Office, using data from the U.S. Air Force.

Projected Funding for Replacement Aircraft Is Well Above Historical Levels From the Mid-2020s Through the 2040s

Projected Air Force Costs for Procuring New Aircraft, 2019–2050

Billions of 2018 Dollars



CBO projects increasing costs in the 2020s as the F-35A and B-21 fleets are built up. Costs increase further still in the 2030s as procurement of PCA aircraft commences.

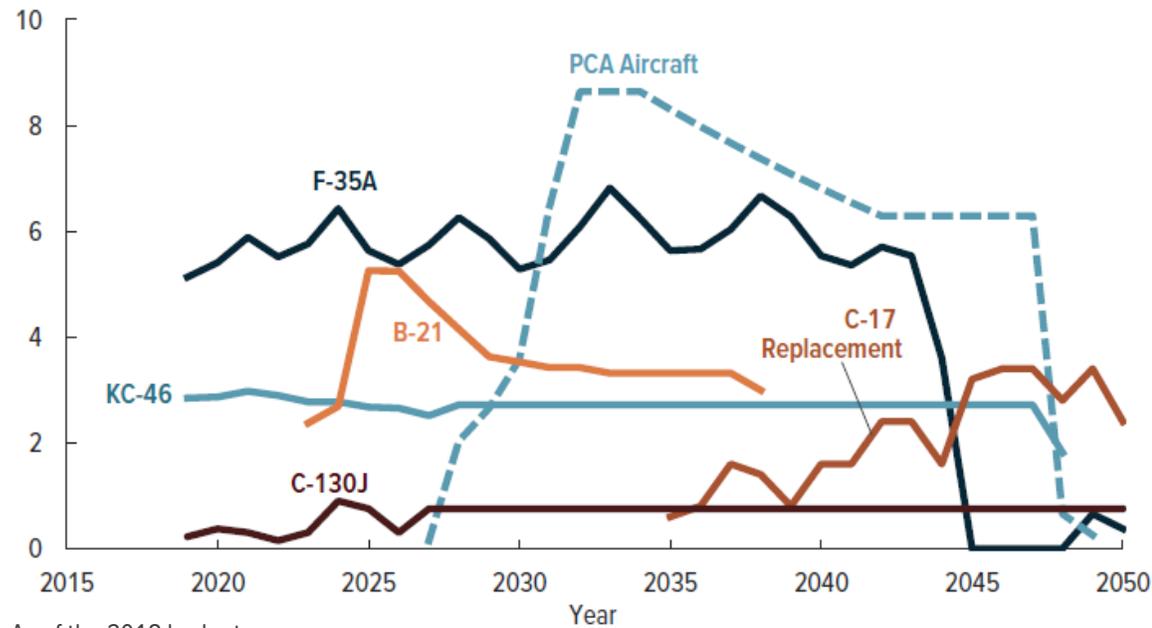
Source: Congressional Budget Office.

PCA = Penetrating Counter Air.

F-35s and PCA Aircraft Dominate Future Procurement Costs

Projected Costs for Procuring the Most Expensive New Aircraft, 2019–2050

Billions of 2018 Dollars



In CBO's projections, F-35A, KC-46, and C-130J procurement occurs during most of the projection period. B-21 procurement commences in the mid-2020s and runs through the late 2030s. Procurement of a C-17 replacement commences in the mid-2030s.

As of the 2018 budget.

Source: Congressional Budget Office.

PCA = Penetrating Counter Air.

CBO's PCA Aircraft Cost Estimate Elicited Considerable Attention

- “A \$300 Million Fighter Jet?” *Fiscal Times*, December 14, 2018.
- CBO estimated the unit cost of next-generation fighter aircraft using historical precedents such as the F-22 (but with historically observed real cost escalation).
- Possible alternatives to such an aircraft:
 - The F-15X
 - Buying additional F-35As
 - Allowing fighter fleet to shrink

Outline

- Project Background
- The Demographics of Today's Air Force Fleet
- Projections of Future Aircraft Procurement
- **Managing Procurement Costs in Peak Years**

The Air Force Could Adopt a Variety of Approaches to Reduce the Annual Costs of Procuring Aircraft

- Delay procuring some modern aircraft and extend the life of retiring aircraft.
- Buy new versions of some aircraft (e.g., F-15s and F-16s) instead of developing and procuring new modern aircraft.
- Delay procuring new modern aircraft and accept a temporary reduction in force structure.
- Replace retiring aircraft with fewer new aircraft and accept a smaller force structure.
- Replace retiring aircraft with a mixture of new modern aircraft and new versions of older aircraft.