

Commercial Derivative Aircraft—What Lessons Can Be Learned From the KC-46 Acquisition?



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Agenda

- Background
- Cost, Schedule, and Performance Outcomes
- Contracting and Sustainment Planning Lessons Learned

Background

- Program began in February 2011
- Boeing was awarded a contract to develop and produce up to 179 KC-46 tankers
- KC-46 offers several refueling improvements over legacy aircraft

Background – Refueling Operations

KC-135 refueling



KC-46 refueling



Background – KC-46 Has 3 Refueling Mechanisms

Boom



Centerline Drogue



Wing Aerial Refueling Pods

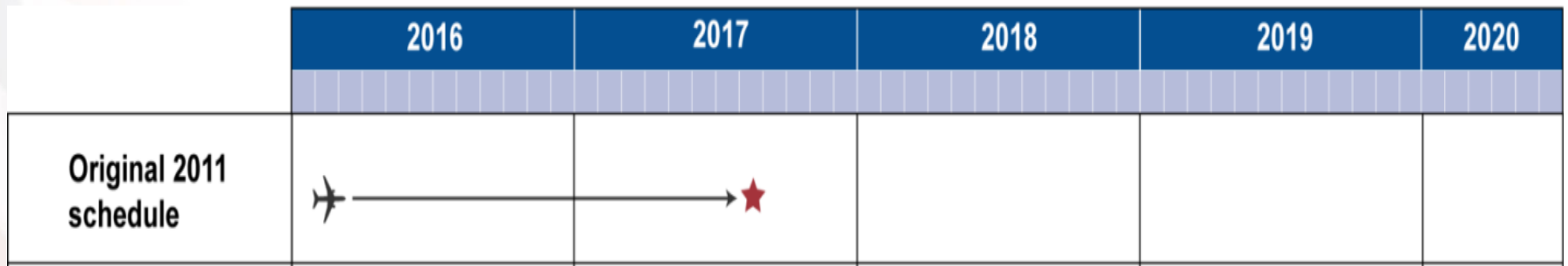


Status Towards Meeting Program Goals

Schedule	 A large, 3D-style red 'X' mark indicating a failure to meet the goal.
Performance	 A large, 3D-style red 'X' mark indicating a failure to meet the goal.
Cost	 A large, 3D-style green checkmark indicating that the goal was met.

Original KC-46 Schedule

Development contract required Boeing to deliver the first 18 fully capable aircraft by August 2017

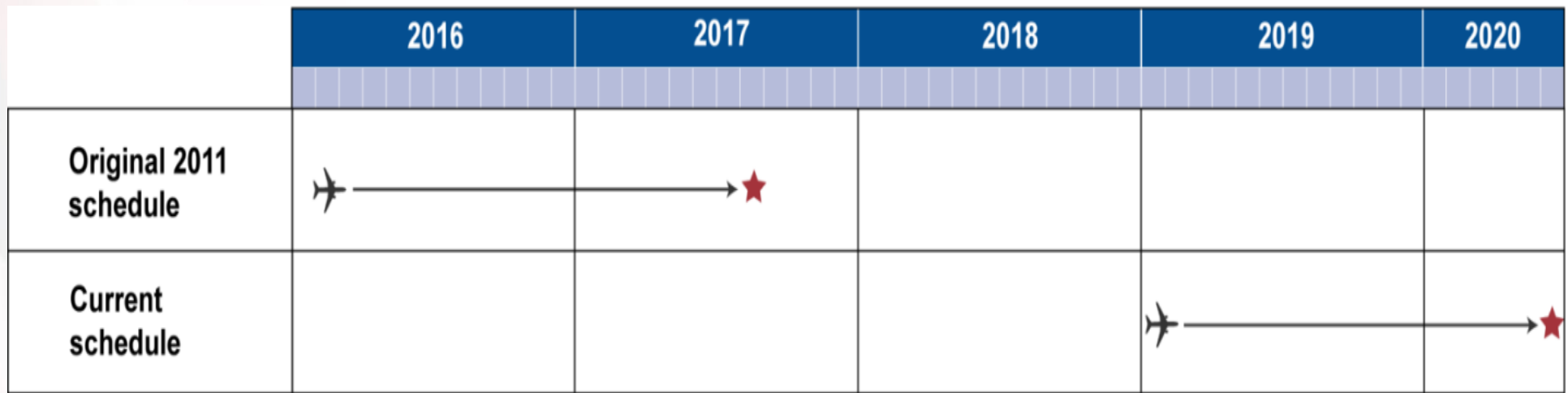


✈ Delivery of the first aircraft

★ Delivery of 18 aircraft with all aerial refueling systems

Source: GAO analysis of KC-46 program data. | GAO-19-480

Current Schedule Reflects a 3-Year Slip



 Delivery of the first aircraft  Delivery of 18 aircraft with all aerial refueling systems

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- Aircraft currently being accepted can only perform 2 types of refueling

Critical Deficiencies are Affecting KC-46 Performance

- Refueling operators are having difficulty refueling in all environmental conditions
- Boeing is addressing critical deficiencies with the remote vision system and the boom
- Redesign efforts will take years to complete
- Additional time needed to retrofit aircraft

Air Force's KC-46 Cost Estimate Has Decreased

	<u>Feb. 2011</u>	<u>Jan. 2020</u>	<u>% Change</u>
Development	7,149.6	5,855.5	-18%
Procurement	40,236.0	34,538.1	-14%
Military construction	<u>4,314.6</u>	<u>2,698.9</u>	<u>-37%</u>
Total	51,700.2	43,092.5	-17 %

Practices that Limited Government's Exposure to Cost Overruns

- Fixed price incentive fee contract helped the government avoid \$1.4 billion cost overruns as of January 2020
- Contract also contains three specific clauses that further limited the government's financial risk:
 - Correction of deficiencies clause
 - Fuel usage rate clause
 - Long-term pricing



Other Contract Provisions Magnified Program Challenges

- Production lot awards were schedule driven rather than knowledge driven.
- Progress payments were based on costs Boeing incurred rather than on its demonstrated performance.
- The contract did not identify delivery dates for the first 18 aircraft.



Opportunities to Learn from KC-46 Sustainment Approach

- Air Force will be providing organic maintenance on the KC-46 while also maintaining full FAA certification of the aircraft over the life of the program. This will require
 - policy changes
 - changes in culture
- Air Force estimated it would save over \$400 million by using world-wide part pools
 - Would reduce storage costs, and obsolescence and diminishing manufacturing source issues
 - One key underlying assumption was incorrect



Questions?



For additional report details, see GAO-19-480 at www.gao.gov



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