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Testimony

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TACTICAL AIRCRAFT

Impact of F-22 Production Cost Reduction Plans on Cost Estimates

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Management



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Mr. Chairman and Members of the Subcommittee:

I am pleased to be here today to discuss our work regarding the impact of F-22 cost reduction plans on cost estimates for F-22 production.

As you know, the Air Force started developing the F-22 in 1991, and plans to complete development in September 2003. The Air Force plans to procure 333 production aircraft at a cost currently limited¹ to \$37.6 billion by the National Defense Authorization Act for Fiscal Year 1998.² The act does not specify the total number of aircraft to be procured.

As requested, we have updated the information we provided to the Subcommittee last August³ on the F-22 production program and have prepared a report being released today.⁴

Today, we will highlight our work concerning (1) potential cost reduction plans, (2) production cost estimates by the Air Force and the Office of the Secretary of Defense, and (3) DOD's actions to implement recommendations included in our August 2000 report.

In summary, the F-22 contractors' estimated amount of cost reduction plans total about \$26.5 billion. Plans pertaining to about half of this amount have been implemented. After considering the cost reduction plans, both Air Force and the Office of the Secretary cost estimators projected in late 2000 that F-22 production costs would still exceed the \$37.6 billion congressional cost limitation if the Air Force were to procure

¹ The cost limitation, as adjusted, is currently \$37.6 billion for 333 aircraft and does not include \$1.575 billion in fiscal year 2000 funding associated with six aircraft labeled Production Representative Test Vehicles that are excluded from the production cost limitation. Those aircraft are funded mostly with appropriations for Research, Development, Test and Evaluation as approved by the Congress. The production cost limitation does, however, include about \$200 million for advanced procurement related to those six aircraft.

² P.L. 105-85, Nov. 18, 1997.

³ *Defense Acquisitions: Recent F-22 Production Cost Estimates Exceeded Congressional Limitation* (GAO/NSIAD-00-178, Aug. 15, 2000). See Related Products List for additional reports on the F-22 program.

⁴ *Tactical Aircraft: Continuing Difficulty Keeping F-22 Production Costs Within the Congressional Limitation* (GAO-01-782, July 16, 2001).

333 F-22s. Air Force estimators projected the cost at \$39.6 billion;⁵ the Office of the Secretary estimated \$46.6 billion.⁶

Since both the Office of the Secretary and the Air Force had projected that costs would exceed the limitation, we recommended in August 2000⁷ that the Secretary of Defense reconcile the number of F-22s needed with the amount of the congressional cost limitation on F-22 production. DOD officials agreed but said they would make the judgements as part of the next Quadrennial Defense Review. We also made a recommendation regarding the regularity and scope of reporting by the Air Force to the Under Secretary of Defense for Acquisition, Technology, and Logistics on the status of the cost reduction plans. While the status of cost reduction plans was a topic in the last Air Force briefing to the Under Secretary, information reported was less comprehensive—and thus less useful—than we had recommended.

Background

In 1997, the Air Force and contractors reported that the F-22 production cost could grow substantially and that the contractors should develop cost reductions to offset that cost growth. The Office of the Under Secretary of Defense for Acquisition, Technology and Logistics agreed. Since then, the contractors and the Air Force have been developing and implementing plans to reduce costs by enhancing production technology, improving manufacturing techniques, and improving acquisition practices.

Cost reduction plans are categorized as “challenge,” not yet implemented or implemented. This categorization defines the relative progression of these plans toward potentially achieving future cost reductions. Challenge plans are those that are not yet well defined and are not yet close to achieving future cost reductions. Because these challenge plans are not yet well defined, neither Air Force nor Office of the Secretary cost estimators assumed any cost reductions from the challenge plans when

⁵ Air Force cost estimators projected the costs for 331 aircraft at \$38.5 billion. To arrive at the cost for 333 aircraft that are planned, \$1.1 billion must be added for 2 aircraft approved for fiscal year 1999, making the projected cost \$39.6 billion for 333 aircraft.

⁶ Briefing documents indicate that Office of the Secretary estimators projected the costs for 331 aircraft at \$45.5 billion. To arrive at the projected cost for 333 aircraft that are planned, \$1.1 billion must be added for 2 aircraft approved for fiscal year 1999, making the projected cost \$46.6 billion for 333 aircraft.

⁷ [GAO/NSIAD-00-178](#).

formulating their estimates. Not yet implemented plans are those that are better defined and are believed to be sound and possible. However, actions necessary to make them a reality have not been taken. Implemented plans are those closest to achieving cost reductions. The Air Force and contractors' criteria for determining if a cost reduction plan is implemented include whether

- the contractor has submitted a firm-fixed price proposal that recognizes the impact of the cost reduction,
- the impact of the reduction has been reflected in a current contract price—either with the prime contractor or a supplier to the prime contractor,
- the contractor has reduced the standard number of hours allocated to a specific task,
- the reduction has been negotiated in a forward pricing rate agreement, or
- the reduction has been negotiated with a subcontractor or vendor.

The current F-22 production cost limitation that stands at \$37.6 billion has been adjusted to reflect planned acquisition of 333 production aircraft, 6 fewer than included in the cost limitation in effect in 1999. This change reflects congressional action on the fiscal year 2000 Air Force budget, in which the Congress approved funding for 6 aircraft using appropriations for Research, Development, Test and Evaluation. Accordingly, the 6 aircraft and most costs were eliminated from the production cost limitation and added to the development cost limitation.

Potential Cost Reductions Identified by Contractors Have Increased

The F-22 contractors' estimated amount of cost reduction plans added up to \$26.5 billion in January 2001. The total consists of

- About \$4.2 billion (16 percent) labeled as a challenge amount;
- About \$8.5 billion (32 percent) in cost reductions not yet implemented; and
- About \$13.7 billion (52 percent) in cost reductions that have been implemented.

In January 1997, the Air Force and contractors had estimated cost reduction plans totaling \$13.1 billion dollars. Thus, the value of these plans has doubled in a four-year period. Ultimately, if the savings from the cost reduction plans are to be achieved, production contract prices and Air Force expenditures must be lower than would have been the case if the plans had not been implemented. The Air Force and contractors have entered into an understanding that relates the probable total affordability

of F-22 production to target contract prices for low-rate initial production. Until contracts are negotiated, cost estimates will continue to reflect judgements of estimators about the potential impact of cost reduction plans when implemented.

Because F-22 production is in its early stages, most of the cost reductions associated with the cost reduction plans have not yet been achieved. One analysis of some cost reduction plans categorized as implemented indicates that lower costs can be achieved. The Air Force in mid-2000 asked Defense Contract Audit Agency (DCAA)⁸ to conduct a limited, independent review of some of the plans. DCAA examined eleven cost reduction plans amounting to \$425 million of the total \$26.5 billion in estimated cost reductions. DCAA did not take exception to the potential cost reductions for 8 of the 11 plans reviewed; found potential cost reductions on two others to be based on judgement, not discrete, measurable events; and found documentation on one to be lacking.

Latest F-22 Production Cost Estimates Exceed Cost Limitation by Greater Margin

As we reported to you in August 2000, both the Air Force and Office of the Secretary cost estimators projected in late 1999 that production costs for 339 aircraft would exceed the congressional cost limitation of \$39.8 billion in effect at that time. The Air Force cost estimators projected production costs at \$40.8 billion, and the Office of the Secretary estimated \$48.6 billion for the 339 production aircraft. Even though the cost estimates exceeded the \$39.8 billion cost limitation in effect at that time, the Secretary of the Air Force maintained that the actual cost would not exceed the limitation, and established the Air Force's position on F-22 production cost at the \$39.8 billion limitation amount.

In estimates made in December 2000 to support the fiscal year 2002 budget request, both Air Force and Office of the Secretary cost estimators continue to project that F-22 production costs will exceed the congressional cost limitation. The Air Force cost estimators projected in late 2000 that production costs were likely to exceed the \$37.6 billion congressional cost limitation by \$2 billion. The cost estimate produced by the Office of the Secretary indicates that costs will likely exceed the congressional cost limitation by \$9 billion. Air Force officials advised us that their cost estimates consider the same cost reduction plans as those by the Office of the Secretary, but that differing judgements regarding the

⁸ DCAA is responsible for contract audits at DOD.

viability of the plans and potential amounts of cost reductions are applied. The Office of the Secretary excluded some cost reduction plans because of the limited viability and estimated lower savings from some cost reduction plans. The following table compares the two cost estimates.

Table 1: Comparison of Production Cost Estimates by the Air Force and the Office of the Secretary and the Impact of Cost Reduction Plans on These Estimates

Then year dollars in billions		
Estimate	Air Force	Office of the Secretary
Production cost estimate including implemented cost reduction plans	\$47.2	\$51.9
Impact of not yet implemented cost reduction plans	(\$7.6)	(\$5.3)
Total production cost estimate	\$39.6	\$46.6

Source: GAO analysis of Air Force and Office of the Secretary data.

If the Office of the Secretary's higher estimate is correct and additional cost reduction plans are not developed and implemented, we project that the Air Force would have to buy about 85 fewer F-22s (or about 25 percent) than the 333 aircraft now planned to stay within the cost limitation. In our August 2000 report, we made a similar projection.

Actions to Implement Prior GAO Recommendations

We recommended in our August 2000 report that the Secretary of Defense reconcile the number of F-22s that need to be procured with the cost limitation and report to the Congress on the implications of procuring fewer F-22s because of potentially higher costs. DOD partially agreed, stating that the affordability of the F-22 will be evaluated during an upcoming Quadrennial Defense Review. More recently, DOD indicated that a review of DOD programs, directed by the President, must be completed before it can comment further on this recommendation.

Our August report also contained a recommendation that the Air Force report to the Under Secretary of Defense on the status of the cost reduction plans each quarter and that quarterly reports include, as a minimum, summary information such as the total number of cost reduction plans identified, the number implemented, the total estimated cost reductions, cost reductions realized to date, and additions and deletions from the plans included in the prior report. However, in the Air Force's March 2001 quarterly review to the Under Secretary, the information reported included only summary information on the total estimated cost reductions.

DOD, in commenting on our report being released today, indicated the information reported in the last quarterly review (June 2001) contained more detailed information. We have examined the June 2001 quarterly review and agree it contains more information on cost reduction plans than previous quarterly reviews in terms of total estimated cost reductions. However, the information reported is still not consistent with what we recommended be reported in August 2000. Specifically, information was not reported as we recommended regarding the total number of cost reduction plans identified, the number implemented, the cost reductions realized to date, and any additions or deletions from the plans included in the prior report.

Mr. Chairman, that concludes my statement. I will be happy to respond to any questions you or other Members of the Subcommittee may have.

Contacts and Acknowledgments

For future questions regarding this testimony, please contact Allen Li, (202) 512-4841, or Robert Murphy, (937) 258-7904. Individuals making key contributions to this testimony include Edward Browning, Arthur Cobb, Marvin Bonner, C. Todd Brannon, Michael J. Hazard, Don Springman and John Van Schaik.

Related GAO Products

Tactical Aircraft: Continuing Difficulty Keeping F-22 Production Costs Within the Congressional Limitation ([GAO-01-782](#), July 16, 2001).

Tactical Aircraft: F-22 Development and Testing Delays Indicate Need for Limit on Low-Rate Production ([GAO-01-310](#), Mar. 15, 2001).

Supporting Congressional Oversight: Framework for Considering Budgetary Implications of Selected GAO Work ([GAO-01-447](#), Mar. 9, 2001).

Defense Acquisitions: Recent F-22 Production Cost Estimates Exceeded Congressional Limitation ([GAO/NSIAD-00-178](#), Aug. 15, 2000).

Defense Acquisitions: Use of Cost Reduction Plans in Estimating F-22 Total Production Costs ([GAO/T-NSIAD-00-200](#), June 15, 2000).

Budget Issues: Budgetary Implications of Selected GAO Work for Fiscal Year 2001 ([GAO/OCG-00-8](#), Mar. 31, 2000).

F-22 Aircraft: Development Cost Goal Achievable If Major Problems Are Avoided ([GAO/NSIAD-00-68](#), Mar. 14, 2000).

Defense Acquisitions: Progress in Meeting F-22 Cost and Schedule Goals ([GAO/T-NSIAD-00-58](#), Dec. 7, 1999).

Fiscal Year 2000 Budget: DOD's Procurement and RDT&E Programs ([GAO/NSIAD-99-233R](#), Sept. 23, 1999).

Budget Issues: Budgetary Implications of Selected GAO Work for Fiscal Year 2000 ([GAO/OCG-99-26](#), Apr. 16, 1999).

Defense Acquisitions: Progress of the F-22 and F/A-18E/F Engineering and Manufacturing Development Programs ([GAO/T-NSIAD-99-113](#), Mar. 17, 1999).

F-22 Aircraft: Issues in Achieving Engineering and Manufacturing Development Goals ([GAO/NSIAD-99-55](#), Mar. 15, 1999).

F-22 Aircraft: Progress of the Engineering and Manufacturing Development Program ([GAO/T-NSIAD-98-137](#), Mar. 25, 1998).

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Defense Aircraft Investments: Major Program Commitments Based on Optimistic Budget Projections (GAO/T-NSIAD-97-103, Mar. 5, 1997).

F-22 Restructuring (GAO/NSIAD-97-100R, Feb. 28, 1997).

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Tactical Aircraft: F-15 Replacement Issues (GAO/T-NSIAD-94-176, May 5, 1994).

Tactical Aircraft: F-15 Replacement Is Premature as Currently Planned (GAO/NSIAD-94-118, Mar. 25, 1994).