

**Prepared Testimony**

**Of**

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**For the House Government Reform Committee  
Subcommittee on National Security, Emerging Threats and International Relations**

**Hearing on**

**“Controlling Costs in Tactical Aircraft Programs”**

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Mr. Chairman and Members of the Subcommittee:

It is an honor to be here today, and to have the opportunity to contribute to the debate over the Air Force's F/A-22 aircraft program.

Today's discussion focuses on recent reports by the General Accounting Office (GAO) about cost growth and technical challenges in the F/A-22 program.

As the GAO reports point out, the F/A-22 program has experienced repeated delays and cost-overruns throughout its history. The most recent reports show that the F/A-22 development program failed to meet specified performance goals in fiscal year 2002, and still faces many technological challenges, including "instability of the avionics software, violent movement, or 'buffeting,' of vertical fins, overheating in portions of the aircraft, weakening of materials in the horizontal tail, and the inability to meet airlift support and maintenance requirements."<sup>1</sup>

I, like many analysts, believe that cost growth in successive generations of weapons systems is inevitable. Over time, threats increase, and capabilities must be improved correspondingly. New technologies are usually more costly than current technologies. Norman Augustine, former head of Lockheed Martin, warned, only somewhat facetiously, that eventually the entire defense budget would be needed to fund a single aircraft, which would be shared by the Air Force, Navy, and Marines. Professor David Kirkpatrick, of the Defense Engineering Group of University College in London, has said that during the Cold War per unit costs of weapons grew at between 5 percent and 10 percent annually, with the costs of tactical aircraft growing at 10 percent.<sup>2</sup>

It is also a truism in Washington that the costs of developing new weapons will rise above original estimates. Estimating costs of as yet non-existent technologies is an imprecise science. Some less generous, or more suspicious, analysts have asserted that defense firms intentionally underestimate costs in order to improve their odds of securing a new contract, knowing that cost growth for Pentagon programs is, by and large, an accepted norm. Either way, program cost increases for DoD weapons routinely reach between 15 percent and 30 percent over the development and production of a given system.

If one agrees with the precept that cost growth in weapons systems – either from one generation to the next, or within a given program, or both - is inevitable, then it seems

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<sup>1</sup> ("Tactical Aircraft, DoD Should Reconsider Decision to Increase F/A-22 Production Rates While Development Risks Continue," GAO-03-431, March 14, 2003, pg. 4

<sup>2</sup> "Trends in the Cost of Weapons of Weapon Systems, And the Consequences," a paper by Professor David Kirkpatrick, Defense Engineering Group of University College, London, presented at the conference "Budgets and Expenditure Choices in the Post Cold War," sponsored by the George C. Marshall European Center for Security Studies and NATO Economics Directorate, September 15-18, 2002.

that the question becomes: how does one determine what is reasonable growth, and what is unacceptable? Further, in attempting to answer this question, it critical to discuss whether strategies that might limit cost growth are applicable, and if so, whether they have been adopted?

In 1997, the Pentagon announced that the F-22 (which was redesignated the F/A-22 in September 2002 to highlight the aircraft's ground attack capability) had experienced \$13.1 billion in cost overruns. In a 2001 analysis, the Defense Department identified a further \$5.4 billion in cost growth. According to the GAO, in addition to the newly identified \$1.3 billion increase, further overruns are likely. One factor driving further increases, according to the GAO report, are continuing delays in developmental testing of the aircraft.

A second, and more important, likely source of cost growth results from the Air Force's failure to fund what are known as "production improvement programs" (PIPs). PIPs are initiatives where additional expenditures result in future net savings. Some examples of PIPs identified by GAO as previously implemented by the Air Force in the F/A-22 program include improvements in the manufacturing process for the aircraft's avionics and in the fabrication and assembly processes for its airframe. The GAO also noted that the earlier such changes are made in the production process, the greater the net savings.

According to the GAO report, the Air Force has been using money allocated by Congress for investment in additional changes in future production to cover cost overruns that occurred earlier. As a result, projected future cost savings will not occur, resulting in further overruns.

When preparing its reports, GAO allows the federal agency in question to view a draft in order to identify inaccuracies and to have the opportunity to dissent or concur with any recommendations presented in the report. These responses are included in the final version. In responding to the GAO's concerns regarding the reallocation of funds intended for PIPs, the Defense Department wrote that GAO "failed to provide credible evidence that investments in [PIPs] reduce costs,"<sup>3</sup> and that therefore they would not allocate the funds as directed. Yet the GAO reports show that while implemented cost offsets in certain years have not equaled planned offsets for those years, over the period FY'99-FY'02, total implemented offsets have slightly exceeded plans.<sup>4</sup>

As GAO has pointed out, continued delays in the F/A-22 program impacts the Defense Department's efforts to modernize its aging tactical aircraft fleet. If the F/A-22 program had met its original schedule, the Air Force would have begun replacing its fleet of F-15s by 1997. Now it will not begin replacing these aircraft until late 2005, at the earliest. And it will do so at a slower rate than previously planned. As a result, the Air Force will

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<sup>3</sup> "Tactical Aircraft: DoD Needs to Better Inform Congress about Implications of Continuing F/A-223 Cost Growth," GAO-03-280, February 28, 2003, pg. 18.

<sup>4</sup> "Tactical Aircraft: DoD Needs to Better Inform Congress about Implications of Continuing F/A-223 Cost Growth," GAO-03-280, February 28, 2003, pg. 6.

be forced to use ageing tactical aircraft, thus driving up overall operations and maintenance (O&M) costs.

In addition to driving up program and O&M costs further, continued delays in the F/A-22 program will exacerbate current problems in the Air Force's efforts to modernize its fleet of tactical aircraft. As GAO pointed out in a February 2001 report,<sup>5</sup> the average age of the Air Force's tactical aircraft fleet will actually grow over the life of the modernization program.

According to the 2001 report, while the services do not have specific targets for the average age of their tactical aircraft fleets or retirement dates, historically the average age of the Air Force fleet is 11 years and the retirement age is 22 years. At the time of its release, the GAO report indicated that the average age of the current Air Force fleet was 13 years. Given the fact that only a very limited number of new replacement aircraft have entered the fleet since the report was issued, the average age is now certainly higher.

GAO found that the Air Force's modernization plans will not improve this situation, let alone get the average age of the fighter fleets back to the historical average. In fact, age of the fleets will actually increase during the modernization program. In 2011, the half-way point of the modernization program, the average age of the Air Force's fleet will increase to 21 years. By 2025, at roughly the end of the modernization program, the Air Force fleet's average age will be 16 years, or three years above the average at the time of the report's release. And given that the number of F/A-22s that the Air Force will purchase has been reduced from 339 to 276 since that report was released, the average age will likely be slightly higher.

Further, as a result of these rising costs, the number of aircraft that the Pentagon estimates it can purchase without violating a congressionally mandated cap on the total cost of the program set in 1997 is diminishing. The Defense Department estimated in 1997 that it could afford to purchase 438 aircraft. That number sank to 333 in 2001. And in a letter last October to Rep. John Tierney, D-Mass., a member of this subcommittee, the Pentagon reported that only 224 aircraft could be purchased with the expected funding. This assessment does not reflect the further reductions that might result from the \$2 billion in recently identified cost growth, nor the impact of any further overruns.

Members of the subcommittee unfortunately much of what you've heard here today is not new news. It is, rather, just the latest chapter in what is already the long, sad tale of the F/A-22. Yet some supporters of the F/A-22 will argue that prudence dictates that, given the substantial investments already made in the program, it must continue to completion, lest these funds be wasted. I, for one, however, have never believed that future mistakes will redeem us for past mistakes. And there are viable alternatives to fully funding the F/A-22 program.

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<sup>5</sup> "Tactical Aircraft: Modernization Plans Will Not Reduce Average Age of Aircraft," GAO-01-163, February 9, 2001.

Last year I co-authored a paper that looked at various weapons programs and recommended alternatives to current Pentagon development plans. As part of that paper I recommended that the Air Force limit production of the F-22 fleet to a “silver-bullet” force of a maximum 120 aircraft. While there are substantial costs (\$400 million-\$600 million) involved in canceling existing contracts, immediate termination of the F-22 nonetheless would result in more savings than a partial buy. However, the money already spent on research and development, as well as the 51 aircraft currently authorized for deployment (representing roughly \$35 billion in investments) would effectively be wasted, since the number of aircraft obtained would be insufficient to train pilots and provide a viable operational capability.

Instead, a “silver bullet” buy will permit the Air Force to field one air wing (with training and attrition replacement). A force of this size would allow the Air Force to learn about producing such technically complex aircraft, permit the development of suitable operational tactics, and provide a sufficient force to perform any future missions that require the F-22s stealth characteristics and other improved performance capabilities. The Congressional Budget Office (CBO) estimates that limiting the F-22 program to such a force while replacing the remaining proposed F-22s with new F-15s would save \$10 billion over 10 years.<sup>6</sup>

Mr. Chairman, once again, thank you for the opportunity to appear here today. I look forward your questions.

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<sup>6</sup> “Budget Options for National Defense,” the Congressional Budget Office, March 2000.