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# **FIGHTER DRAWDOWN DYNAMICS**

## Effects on Aircrew Inventories

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## Summary

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The Air Force faces an increasing demand for personnel with pilot skills, a demand driven by the expanding number and size of various staffs (such as those of air operations centers) and an increased demand for operators of unmanned aircraft systems (UASs), who, by Air Force policy, must be pilots.<sup>1</sup> At the same time, the Air Force faces a declining ability to produce pilots (particularly fighter pilots) because its aircraft inventory is decreasing: By 2016, there will be fewer than 1,000 fighter aircraft in the total Air Force inventory (active, Guard and Reserve)—only 32 percent of the number in 1989. With fewer aircraft, it is difficult for all pilots to fly enough to maintain their combat skills, and it is particularly difficult for new pilots to gain enough experience in their first flying tour to be prepared for follow-on nonflying and flying positions (pp. 54–60). This has made aircrew management—the process of maintaining an aircrew force of sufficient size and readiness to accomplish the Air Force’s current and forecast mission—particularly difficult, and without changes to current management policies, the Air Force will be unable to fill important flying and staff positions.

Our primary conclusion is that, to maintain the health of fighter units, the number of new pilots entering them must be reduced, ultimately to below 200 per year by 2016. Overabsorption decreases the number of monthly sorties inexperienced pilots can fly, lowers the average experience level of fighter units, makes it difficult or impossible

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<sup>1</sup> Because *UAS* is the term that refers to the equipment the pilots operate directly, it is the term commonly used among military pilots and in this monograph to refer to skills, equipment, and operations related to *unmanned aerial vehicles*.

for new pilots to become experienced in an initial three-year tour, and increases the amount of time a pilot must wait between a first flying tour and an opportunity for a second one, thus slowing the development of the background and experience elements needed to make the pilot useful in staff or supervisory positions. All these circumstances can lead to a general degradation of pilot skills and combat capability.

The current situation in fighter units is the result of several decisions made during the Cold War drawdown in Air Force structure (p. 7). The drawdown resulted in a surplus of pilots, and the Air Force responded to the surplus by decreasing pilot production in the early 1990s without encouraging the departure of pilots already in the inventory (pp. 7–8). The Air Force also closed down one of its pilot training bases. By 1996 the fighter force had declined enough to require increasing pilot production, but the earlier base closure made the desired increase (almost doubling fighter-pilot production) difficult. In addition, the low production of the early 1990s meant that a shortage of pilots in specific skill groups and grades had developed (p. 7). Partly to address the shortage, but also to meet increasing demands for pilots in staff positions, a series of four-star level summits from 1996 to 2003 established annual pilot-production goals that remained in force through 2007: 1,100 total pilots, of which 330 were to be fighter pilots (pp. 8–10).

In 2005, RAND used a dynamic mathematical model of fighter pilot absorption capacity (the process of turning a new pilot into an “experienced” one) to show that attempting to achieve the established fighter-pilot production goals with the projected aircraft inventory would severely impair the ability of fighter units to maintain combat capability and provide the training necessary to produce experienced pilots (pp. 42–45). Units would have more personnel than they were authorized for the number of aircraft they had; inexperienced pilots would not be able to fly the number of sorties they needed to each month; and new fighter pilots would complete their first three-year tours without receiving the experience they needed for follow-on flying assignments or staff tours (p. 45).

These results, along with the recognition that other policy changes would affect the health of fighter units, led to the establishment of the

Transformational Aircrew Management Initiatives for the 21st Century (TAMI 21) working group in October 2006. Its goal was to find solutions to various aircrew management problems and present them to senior leadership. The RAND dynamic model enabled rapid analysis of the consequences of policy solutions that the TAMI 21 group discussed. The group's primary conclusion was that the flow of new pilots into fighter units must be reduced to a level at which units could absorb them—about 200 new fighter pilots per year. Using RAND modeling, the group also showed, however, that the Air Force could still maintain an inventory of personnel with the desired pilot skills (and satisfy emerging UAS requirements) if it implemented several policy initiatives (pp. 52–67).

After a four-star level aircrew management conference in March 2007, the Air Force implemented a much-revised version of the TAMI 21 recommendations. The most important decision was an attempt to simultaneously meet increased demands for UAS pilots and decrease the overmanning of fighter units by transferring a limited number of inexperienced pilots from fighter units to UAS aircraft before they had completed their first three-year tour. Unfortunately, RAND modeling showed that, while this decision led to short-term improvements in F-16 and F-15C fighter units, it would still be necessary to make long-term reductions in the flow of new pilots into these units to keep them from becoming “broken” by 2013.<sup>2</sup> Using the dynamic model, RAND was able to define one option for pilot-production reductions that would allow the F-15C and F-16 units to remain healthy through 2016 (pp. 72–76).

As 2008 came to a close, the Air Force faced a large increase in the demand for UAS operators: An April 2008 document shows the demand increasing from 458 in FY 2008 to 1,060 by FY 2013 (p. 67). Emerging air operations center and numbered air force staff requirements could increase pilot requirements by another 1,000 (Carney, 2008)—and this while some major command staffs are already able to

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<sup>2</sup> “Broken” is a technical term defined in Chapter Two.

fill fewer than 75 percent of their rated staff billets.<sup>3</sup> At the same time, the fighter aircraft inventory continues its decline, and the replacement of F-16s with Joint Strike Fighter aircraft may be delayed.<sup>4</sup>

Since RAND's modeling has shown that, under current conditions, the flow of pilots into active-duty fighter units must be reduced, the Air Force faces both a supply and a demand problem for people with fighter pilot skills. The demand problem can be addressed in at least two ways:

1. Reduce demand by closely examining emerging staff requirements and eliminating those that are not actually required.
2. For positions that have been validated and that do appear to require personnel with fighter pilot experience, explore the full potential of other available manning alternatives, such as appropriately developed personnel currently affiliated with the Guard and Reserve, career enlisted aviators, and civilians with prior military experience.

The supply problem can be addressed in at least two ways:

1. Increase the supply of fighter pilots by effectively using the total force aircraft inventory (active, Air National Guard, and Air Force Reserve force structure) to absorb and develop new active pilots.
2. Increase the supply of UAS pilots by establishing an independent, self-sustaining UAS career field. The current requirement that UAS operators who are fighter pilots must be able to return to a fighter unit is unmanageable—there are not enough fighter aircraft to allow it. Creating a UAS career field (and not treating it as an air liaison—forward air control—Air Education and Training Command [ALFA] tour) will decrease stress on fighter units and increase the supply of UAS operators. A short-term

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<sup>3</sup> Email communication from Air Force Personnel Center, Deputy Personnel Assignment Operation (AFPC/DPAO), February 5, 2008.

<sup>4</sup> The Air Staff's Distribution Plan Version 4.1, May 2007 does not show anyone filling Joint Strike Fighter cockpits as late as FY 2016.

solution here might involve sending specialized undergraduate pilot training graduates to UAS tours. A longer-term solution might involve changing the requirements for UAS operators (requiring, for example, only the first half of specialized undergraduate pilot training to become one).

It is critical that the Air Force curtail the flow of new pilots into active fighter units to avoid exceeding the current absorption constraints of the training system.<sup>5</sup> While, in the short term, reducing this flow could lead to shortfalls for some Air Force needs, the supply and demand options listed above will still allow the Air Force to meet expanding needs in other areas. Failing to reduce the flow will, in the near future, damage the combat capability of fighter units.

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<sup>5</sup> Increasing the aircraft inventory would, of course, solve the absorption problem, but this solution is highly unlikely. Allowing simulator hours to provide more credit toward experience requirements and RAP requirements has the potential to increase the absorption capacity of units, but this requires investments in the improvement of simulator infrastructure and capabilities.