

OCTOBER 2020

Three Recommendations for Improving Air Force Pilot Retention

AUTHOR
Tobias Switzer

A Report of the CSIS International Security Program

CSIS | CENTER FOR STRATEGIC &
INTERNATIONAL STUDIES

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Introduction

Former Air Force Chief of Staff General David Goldfein publicly called the pilot shortage a crisis in 2016 back when the Air Force had a deficit of 1,500 pilots. The problem has only worsened since then, leaving the service today with a gap of 2,100 pilots, 1,300 of whom would be flying fighters.¹ The beginning of the current pilot shortage can be traced back to 2012 when the regular stream of separations accelerated to a cascade as too many pilots eschewed both full military careers and part-time opportunities to serve in the Air National Guard and Air Force Reserves. Upon completion of their initial service commitments, 4,255 pilots separated between 2012 and 2019 compared to 2,529 between 2004 and 2011, a 68 percent increase.² Requiring roughly 20,000 pilots between active, guard, and reserve components, the Air Force is straining to meet its defense obligations. Since 2016, Air Force senior leaders, including three secretaries of the Air Force, have regularly testified in Congress about the pilot shortage and the potential adverse effects on national security if left unaddressed.³

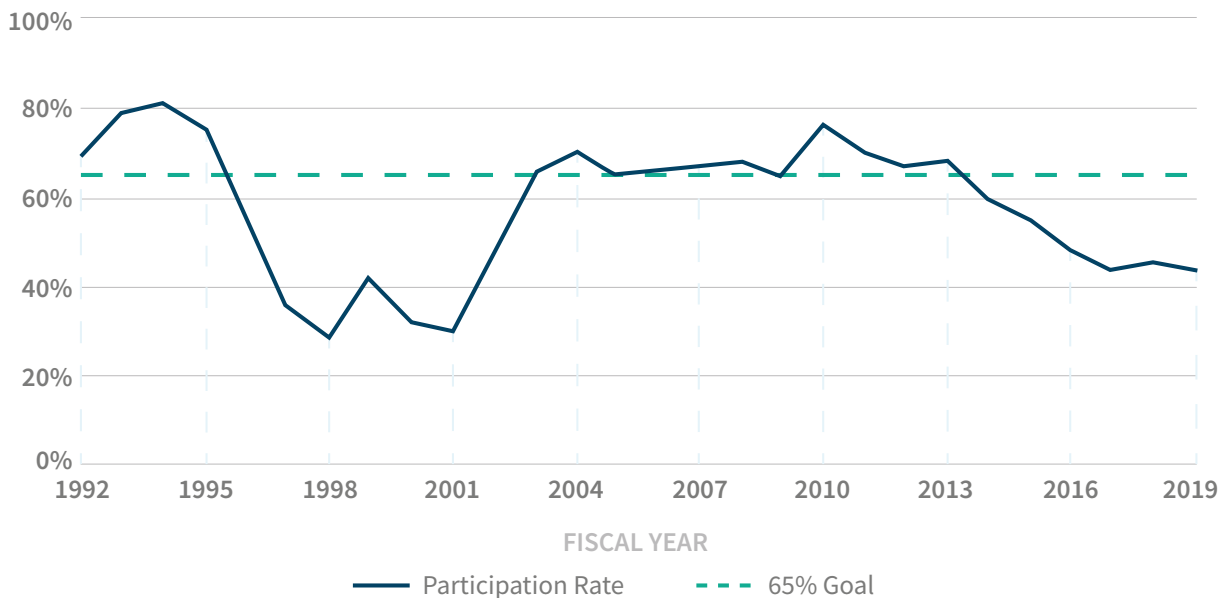
To make active-duty service more attractive to pilots, the Air Force initiated a flurry of programs over the last four years to bolster compensation and morale. With authorization from the Office of the Secretary of Defense (OSD) and Congress in the spring of 2017, the Air Force increased its maximum aviation career incentive pay, also known as flight pay, from \$840 to \$1,000 per month, the first increase in nearly 20 years.⁴ Additionally, in 2016 the Air Force sought a boost in the congressionally-authorized Aviation Bonus (AvB) program from \$25,000 to \$60,000 per year.⁵ The AvB program allows the military services to offer retention contracts to pilots and other officer aviators, exchanging money

for additional years of active-duty service. While the House approved the increase, the late Senator John McCain, then chairman of the Senate Armed Services Committee, nixed the idea of substantially larger AvB contract payments, arguing that the Air Force needed to fix the issues causing pilot dissatisfaction first.⁶

The drain of military talent coincided with massive growth in airline pilot hiring during roughly the same period. From 2014 to 2019, major U.S. carriers hired 28,186 new airline pilots, a 30-year record, with no sign of slowing before the Covid-19 pandemic hit.⁷ On offer from the airlines was an average annual salary of \$150,000 after 5 years and \$250,000 after 10 years, more than most generals and admirals earn.⁸ Delta, American, United, and the rest of the major U.S. airlines could have hired every single transport and fighter pilot in the active-duty Air Force, Army, Navy, Marine Corps, and Coast Guard and still not satisfied their voracious needs.

Although Congress ultimately agreed to increase the ceiling of the AvB program to \$35,000 per year, General Goldfein believed that the Air Force could never compete for pilot talent on financial terms alone. His strategy was to strengthen the appeal of a long career in the Air Force, asserting that “pilots stay because they want to work with the most amazing people, with the greatest technology, to have a mission that matters, and give their life meaning . . . and that’s the value proposition.”⁹ In addressing low morale, the Air Force attempted to reduce many of its 365-day deployments, cut down on administrative burdens, hire civilians to handle some squadron duties, increase flight hours, and procure flight equipment designed for women. It is attempting these things, and many more, in the hopes of alleviating the problems pilots identified in retention surveys as driving them to leave the service.¹⁰

Figure 1: Air Force Pilot Participation in AvB



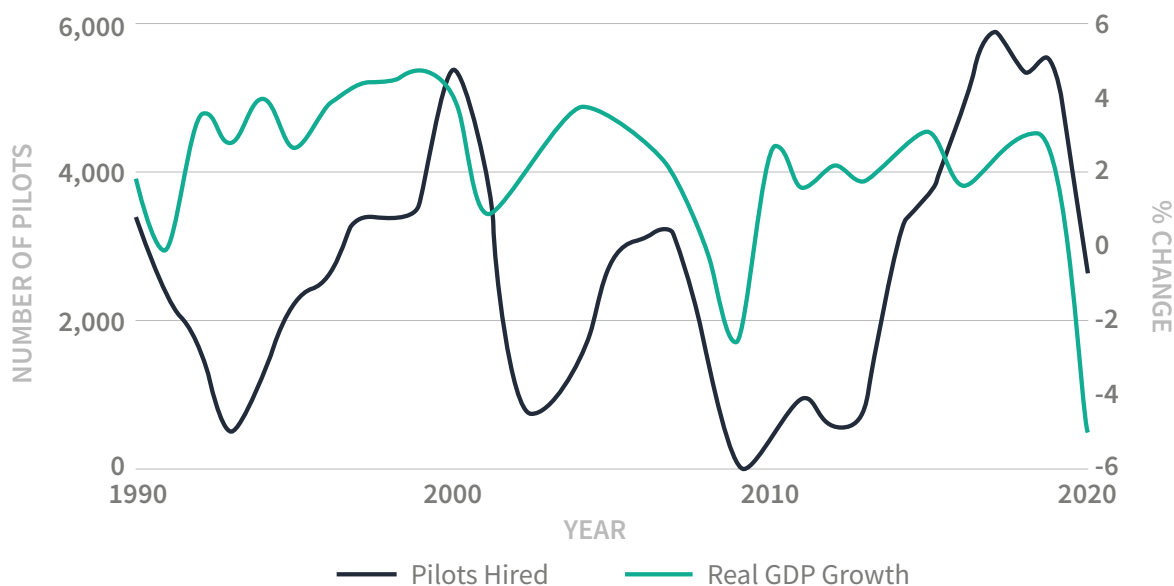
Note: This graph shows the percentage of eligible Air Force pilots who signed an AvB retention contract upon completion of their initial active-duty service commitment by fiscal year, FY 1992–2019. The Air Force’s annual goal is for 65 percent participation.

Source: Air Force Personnel Command, *Rated Officer Retention Analysis Reports*, FY 2004–2019.

Yet none of these efforts have thus far reversed the outflow of Air Force pilots. The percentage of pilots who signed AvB retention contracts upon completing their initial service commitment continued to decrease between 2016 and 2019 from 48 percent to 44 percent, though it has not yet sunk to the even lower levels seen in 2000 and 2001. For fighter pilots, whose manning situation is the most precarious, their lower-than-average participation rates continued to decline after the Air Force increased their AvB retention contract annual payments to \$35,000. During FY 2014 through FY 2016, 45 percent of initially eligible fighter pilots signed AvB retention contracts.¹¹ Despite increased payments in FY 2017 through FY 2019, only 38 percent signed AvB retention contracts.¹² At worst, the combination of increased financial compensation and the initiatives to boost morale did not affect pilot retention decisions. At best, they prevented a disaster from becoming a catastrophe. Then came the Covid-19 pandemic.

It is too soon to tell how Covid-19 will affect Air Force pilot manning. With the collapse of air travel creating perilous financial conditions for the industry, all the major passenger airlines suspended new pilot hires indefinitely.¹³ With a precarious economy, it is reasonable to believe that more pilots will decide to remain in the active-duty Air Force, for now. However, the Air Force's plan to reduce the deficit of pilots by ramping up the training of new pilots has also stalled out. Even before the pandemic hit the United States, the Air Force had already revised its 2020 production estimates of new pilots downward from 1,480 to 1,300 and now believes it will close out the fiscal year with only 1,150.¹⁴ The net effect of the pandemic on pilot manning is unclear. In any case, whatever relief to the pilot shortage that may occur is likely temporary. Structural factors and latent demand for more airline pilots will continue to be a drag on the Air Force's pilot retention efforts in the future.¹⁵

Figure 2: Airline Pilot Hiring and Economic Growth



Note: This graph shows U.S. annual airline pilot hiring by major carriers versus change in GDP, adjusted for inflation, from 1990 to 2020 (estimated).

Source: "Real Gross Domestic Product," Federal Reserve Bank of St. Louis, August 6, 2020, <https://fred.stlouisfed.org/series/A191RL1A225NBEA>; "Pilot Hiring History, Yearly," Future & Active Pilot Advisors, <https://fapa.aero/hiring-all.asp>.

The pattern of airline hiring following recessions and global economic shocks over the last 30 years provides a clue as to how much reprieve the Air Force may receive. After the U.S. economy contracted during the 1991 recession, it took three years until airline pilot hiring began growing again. The 2001–2002 slowdown in economic growth, which included a stock market crash and the September 11, 2001 terrorist attacks, only slowed airline pilot hiring for two years. Airline hiring slowed again between 2007 and 2013 due to the global financial crisis and accompanying recession. This lengthier period of weak pilot hiring also coincided with the congressional decision in 2007 to extend age limits for commercial airline pilots from 60 to 65.¹⁶ Undoubtedly, many older pilots who would have retired in that six-year window continued flying instead, thereby temporarily relieving the airlines of the need to hire large numbers of new pilots.

It is impossible to predict precisely how long it will be until the airlines resume their pilot hiring, as policymakers and business leaders around the world are still grappling with the effects of the Covid-19 pandemic. At the end of 2014, there were 15,733 commercial airline pilots in the United States aged 60 to 64; 2019 ended with 21,292.¹⁷ Congress has shown no indication of pushing the age limit beyond 65, and airlines, who have ceased new hires and are now offering early retirements, are not asking for it. Based on recent history, it is a good bet that once the U.S. economy recovers, strong demand for new airline pilots will return within two to three years.¹⁸

Policymakers and Air Force leaders need to understand that the demand for airline pilots is dormant, not deceased. Given that the Air Force will likely continue to struggle with pilot retention in the medium-to-long term, now is the time to assess current policies and make course corrections. While the Air Force cannot control the airline industry's economic cycles, it can strengthen efforts to enhance the value proposition of a long career to its experienced pilots and retain more of them. The Air Force has more influence over the fateful relationship with its pilots than it realizes. With its fourth pilot shortage since the 1980s temporarily interrupted, the Air Force has the opportunity now to attenuate the effects of airline pilot hiring before recruitment resumes.¹⁹

Based on recent history, it is a good bet that once the U.S. economy recovers, strong demand for new airline pilots will return within two to three years. . . . Policymakers and Air Force leaders need to understand that the demand for airline pilots is dormant, not deceased.

This report contains four sections. First, it examines the dynamics of pilot retention decisions in terms of career agency and force stability. The second section analyzes the effectiveness of the Air Force's AvB retention contract program and finds it wanting. The third section details the Army's similar struggle with junior officer retention and how it implemented a successful plan to increase retention while granting more career agency. Finally, the report concludes with three policy recommendations that will improve Air Force pilot retention without spending additional money.

The Agency-Stability Dilemma

A Framework for Understanding the Pilot Retention Problem

At the heart of the pilot retention crisis is a tension between the Air Force's need for a larger and more stable pool of experienced pilots and the personal agency of its pilots who are free to leave military service. Current structures pit the preferences of the Air Force for stability against those of a pilot for career agency, generating a dilemma. Pilots at the end of their initial active-duty service commitment have veto power over the Air Force and can separate from active duty to pursue other paths. This situation puts at risk the Air Force's ability to use its experienced pilots today and in the future.

The Air Force's Problem: Stability

The Air Force has only two approaches to satisfy its pilot manning requirements: train and retain. In thinking about managing government resources, a strategy that favors training new pilots more than keeping existing ones is not fiscally prudent. Training a combat-ready pilot is a multiyear process costing several million dollars, depending on the airframe.²⁰ The longer a pilot stays in the military, the higher the return on the initial investment, as the extended period amortizes the substantial up-front investment. In terms of money and time, it is almost always less expensive to retain an experienced pilot than to train a new one.²¹

Although training more pilots will keep more cockpits full, a new pilot and an experienced pilot are not substitutable. With the experience of several deployments, years of instructing, and execution of all aspects of flying operations, an experienced pilot is the only one who can deliver results of increased depth and scope, in and out of the cockpit. There is also no immediate hire available for a departing pilot who, after 10 years, has valuable human capital the Air Force needs. An external labor market for this pilot's unique human capital does not exist.

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Experienced pilots, at the ranks of majors and lieutenant colonels, are the officers the Air Force expects to use in critical staff positions and to become commanders in the Air Force. A pilot departing after 10 years drains the Air Force of talent to draw upon for work at the Pentagon, commands, and agencies. These experienced pilots are vital to planning and managing joint operations, guiding the development of new weapons systems, and informing military strategies. To a limited extent, the Air Force can outsource some staff positions to other types of Air Force officers, government civilians, and contractors, but not all. Further on, the Air Force will need to draw upon this pool of pilots to command at the squadron, group, and wing level. Pilots leaving at the end of their 10-year service commitment not only create an empty cockpit today, but an empty headquarters office next year and, more importantly, less talent for command in five years.

When pilots come to the end of their initial 10-year service commitment, the Air Force cannot accurately predict who will leave when faced with an undesirable assignment or deployment, creating instability in its force. Even if pilots do not separate from active duty immediately upon completion of their 10-year service obligations, continued service without commitment creates unpredictability. Without enough pilots extending their obligations, too many of them could leave at the same time. Not knowing if and when uncommitted pilots will go creates instability that exposes the Air Force to the threat of failure.

Because of an experienced pilot's irreplaceability, a stable pilot labor force is what the Air Force truly wants. This stability is achieved when pilots stay in and commit to long periods of service. Commitments of five years or more provide the Air Force with confidence that the pilot will finish two full assignments. Labor stability at this range is the source of the Air Force's flexibility to utilize the pilot in an unrestricted fashion for hard-to-fill jobs, non-flying staff work, career-broadening assignments, command, and deployments, both today and in the future. Unrestricted utilization is the state of affairs the Air Force enjoys for the first 10 years of a pilot's career. It does not need to haggle, negotiate, or bargain with its long-term committed pilots or worry that they will depart suddenly.

Pilots leaving at the end of their 10-year service commitment not only create an empty cockpit today, but an empty headquarters office next year and, more importantly, less talent for command in five years.

As the length of commitment shrinks, so does the Air Force's ability to use its pilots in the future. Generally, a commitment of two to five years provides time for the pilot to finish their current assignment and perhaps one more, including deployments. Beyond the next job, the Air Force cannot be confident that the pilot will be available. The limits of time create bounded-utilization for the Air Force.

With commitments of less than two years, the situation starts to become unstable for the Air Force. A pilot with one to two years of commitment remaining is still available to deploy overseas for operations, even for year-long rotations. The Air Force can move such a pilot to a new assignment, but the pilot does not necessarily have to complete a full two-year tour. Unusual circumstances notwithstanding, the Air Force will not do this. The expenditure of funds and loss of productivity almost always exceeds the potential gain of an incomplete tour. This circumstance gives the pilot a veto over undesirable assignments, an instability that creates limited-utilization for the Air Force.

With less than a year of commitment remaining, the pilot can veto new assignments and year-long deployments by initiating separation from active duty. The Air Force has restricted utilization of the pilot under these circumstances, which creates a high degree of instability. At any given time, some of the Air Force's pilots fall into this category. However, if too many pilots have short commitments, especially during periods of strong economic growth and airline hiring, the Air Force's labor pool of experienced pilots becomes highly unstable.

A Pilot's Problem: Agency

Agency is the idea that people exert their will to shape and influence outcomes to achieve their goals. Using intention, forethought, action, and self-reflection, people create visions of their future and attempt to make them a reality. Personal agency is not absolute; it is situationally dependent. Nevertheless, people exercise agency to try to build the life they desire and make choices in that pursuit. Moreover, while people differ in their capabilities, so do they differ in their goals and desires. People with high agency have not just the skills but the ambition and determination as well. People with low agency lack either the means, the intention, or a motivating future vision.

Becoming an Air Force pilot is a long and arduous process requiring a person with high levels of emotional, mental, and physical intelligence. There is one narrow path to success, but many ways to fail. At its core, becoming a pilot requires a person with high ability, a strong will, and a long-term vision; in sum, someone with high agency. But these individuals purposely put themselves in a low-agency state, for more than 10 years, to become an Air Force pilot. For the duration of their 10-year commitment to the United States, pilots agree to go anywhere, at any time, assuming a massive responsibility for resources and lives. The thoughtful process by which they exercised their high agency led them to make this long but finite commitment.

It should come as no surprise then that pilots desire more career and personal agency, and Air Force survey data bears this out.²² In the 2019 Air Force retention survey, 1,936 active-duty pilots reported the top five factors influencing them to leave the service:

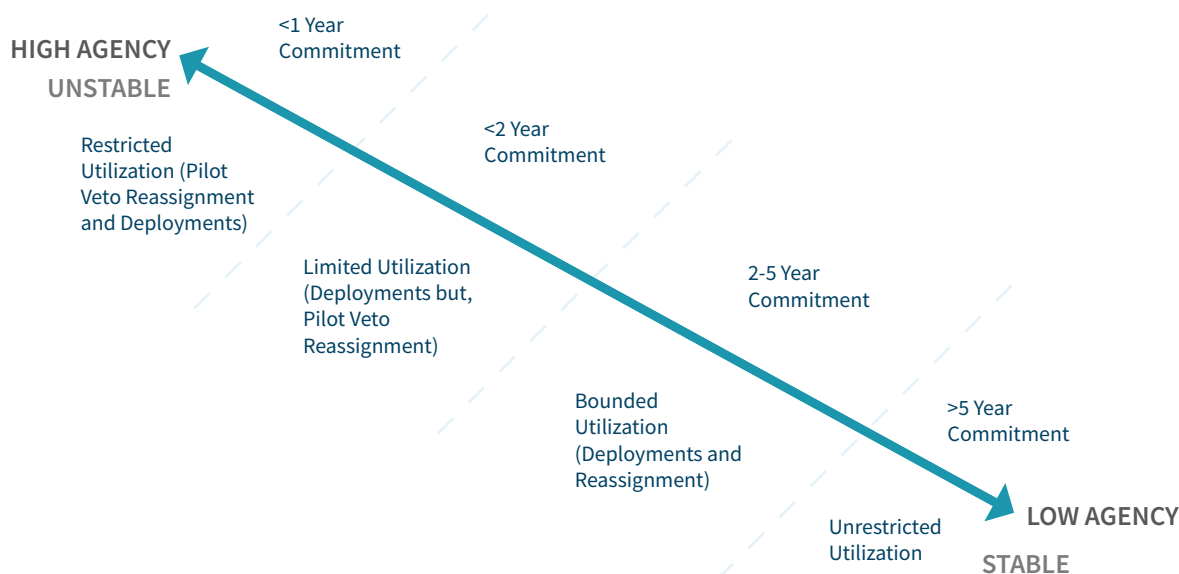
1. Difficulty maintaining work/life balance and meeting family commitments;
2. Choice of job assignments/locations;
3. Amount of additional duties;
4. Availability of civilian jobs; and
5. Overall compensation and benefits package.

The first three factors speak directly to a collective dissatisfaction with a lack of agency. Pilots have goals or aspirations for their lives but do not believe they have the means to achieve them in the Air Force. Unable to be the spouse or parent they desire to be because of a lack of time, pilots are frustrated. Unable to choose their assignments and locations, pilots are frustrated. In having to sacrifice performance in their primary jobs to do additional duties, pilots are frustrated. But their dissatisfaction is rooted not only in the fact that pilots believe they have low personal and career agency in the Air Force. The fourth and fifth factors speak to a conviction that better alternatives are available outside the military, arguably without the first three difficulties.

At the end of their 10-year commitment, with their high agency restored, a pilot will have to weigh the possibilities inside and outside the Air Force. Pilots will likely have a myriad of employment options in government and the private sector, including the airlines and other industries. Opportunities for personal growth and education will also be available at graduate school and other programs. He can choose where to live, how to educate his children, and how to support his spouse. He will have the agency to pursue nearly any of these paths. Moreover, at the end of his service commitment, he has the agency to veto undesirable assignments and deployments.

This state of high agency at the end of a pilot's 10-year commitment generates tension with the Air Force's need to retain experienced pilots and have the unrestricted utilization inherent in a stable force.

Figure 3: The Agency-Stability Dilemma Conceptualized



Source: author's visualization.

Addressing the Agency-stability Dilemma

Retention is a necessary but insufficient condition for carrying out the Air Force's mission, today and tomorrow. Stability is also critical. Keeping a pilot in the service is the first step in a two-step process to maintain a stable force. The pilot needs to remain in but also commit to an extended period of service for the Air Force to have a steady pilot force into the future. The worst position for the Air Force is for all its pilots to leave the service. The second-worst position for the Air Force is for all its pilots to remain in the service without commitments, able to separate at-will should an undesirable assignment or deployment, or a better opportunity, arise.

Pilots have little incentive to commit to lengthier service periods when they can remain in the Air Force while retaining their high agency. They have the means to pursue their goals inside or outside the military, whichever suits their needs without a commitment. Even if a pilot were open to remaining in the Air Force, there is little reason to give up the state of high agency and consequent options.

Any resolution of the dilemma has to reside in a set of options that gains stability for the Air Force and induces the pilot to accept another temporary state of lower agency. The Air Force can give the high-agency pilot more means or more ability in exchange for extended service, and it can positively influence intentions and future visions inside the Air Force through a commitment mechanism. To do this, the Air Force has to find something a pilot is willing to accept in exchange for their high agency.

The Air Force already does this by contracting with all its airmen for education and training opportunities.²³ To ensure a return on the investment of resources for an airman's education and training, the Air Force contracts for a service commitment. In exchange for costly schooling, airmen fulfill the service commitment upon graduation. This is how pilots come to learn the craft in the first place—officers contract for 10 years of service in exchange for flight training. To induce pilots to

commit to lengthy service obligations and forgo their high agency again, the Air Force needs to offer something of value.

The Air Force attempts to do this through AvB retention contracts. In exchange for longer service commitments, the pilot receives more financial compensation. Choosing a higher state of economic agency, the pilot temporarily relinquishes their personal and career agency. But the AvB program did not fix the Air Force's pilot shortage during the last pilot retention crisis in the late-1990s, and as it is currently designed, it will not ameliorate the current situation.

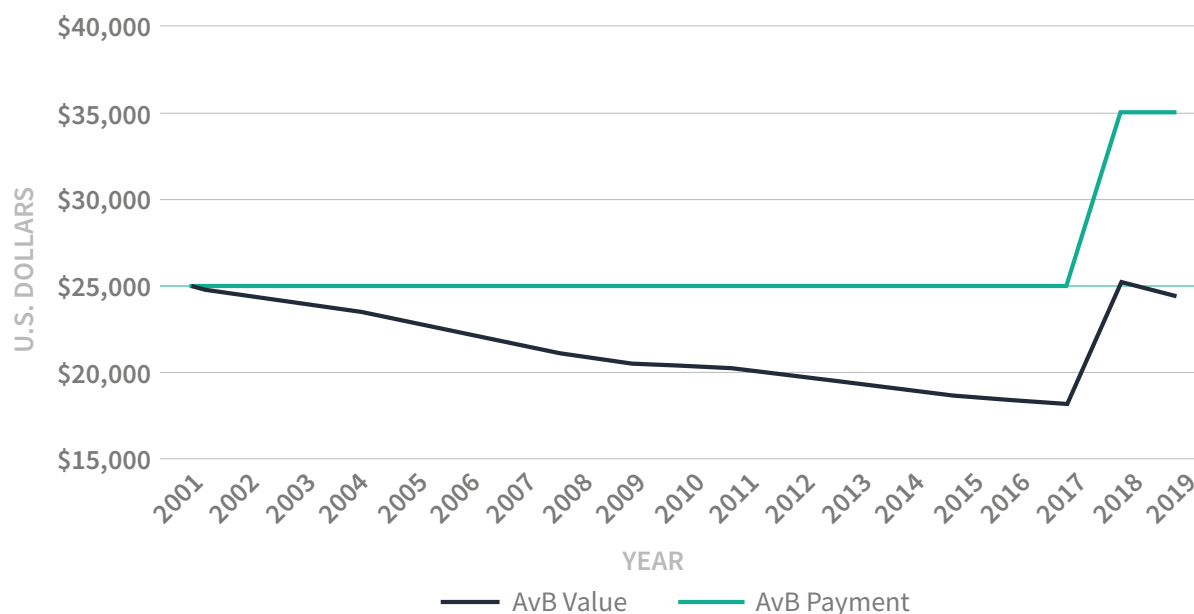
An Evaluation of the Aviation Bonus Retention Program

Since the early-1990s, the Air Force has offered its pilots the congressionally authorized AvB retention contract to extend their service beyond the initial active-duty commitment for pilot training. The program expanded over time to include more senior pilots and other officer aircrew positions, but since 2000 the core retention mechanism by which the Air Force tried to retain pilots completing their initial commitment remained remarkably consistent. From FY 2000 to FY 2016, a retention contract of \$25,000 per year for a fixed number of years of service was available to Air Force pilots.²⁴ Beginning in fiscal year 2017, Congress authorized all the military services to increase AvB retention contract payments to \$35,000.

Yet, while the terms of the AvB retention contract have not changed much, the monetary value of the Air Force's offer to pilots declined since the last pilot retention crisis for three financial reasons. Additionally, three decision design factors weaken the Air Force's AvB retention contract offer. As a result, the AvB program does not convince enough pilots to accept lengthy commitments and thus has been unable to secure stability for the Air Force.

Inflation Eroded the Value of the Retention Contract

Figure 4: The Declining Real Value of AvB



Note: The maximum authorized AvB payment per contracted year of service versus its real value in 2000 U.S. dollars, 2000-2019.

Sources: Air Force Personnel Center and Bureau of Economic Analysis²⁵

Figure 4 charts the real dollar value of the AvB pilot retention contract from FY 2000 to FY 2019. The financial consideration of the retention contract did not keep pace with inflation since 2000, during the last pilot retention crisis period, to this current crisis. From FY 2000 to FY 2016, the maximum retention contract offered to initial commitment pilots was \$25,000 per year. But \$25,000 of extra income in 2000 had more purchasing power than it did 15 years later. The real value of the 2016 retention contract was \$18,329 per year, representing a 27 percent decrease in value since 2000.²⁶

For FY 2017 to FY 2020, the Air Force initiated tiered incentive programs offering \$35,000 per year contracts to fighter pilots, the most challenging pilots to retain beyond initial commitments. However, this authorized ceiling only brought the aviation bonus back in line with its 2000 value. Accounting for inflation, \$35,000 in 2017 was equivalent to \$25,173 in 2000 dollars.²⁷ Congress raised the real value of the retention contract to just above 2000 levels, and the Air Force only offered this contract to fighter pilots. The retention contract offer of \$25,000 did not persuade enough Air Force pilots in 2000 or 2001 to commit to more years of service. It should come as no surprise that the equivalent financial incentive failed to persuade their successors 20 years later.



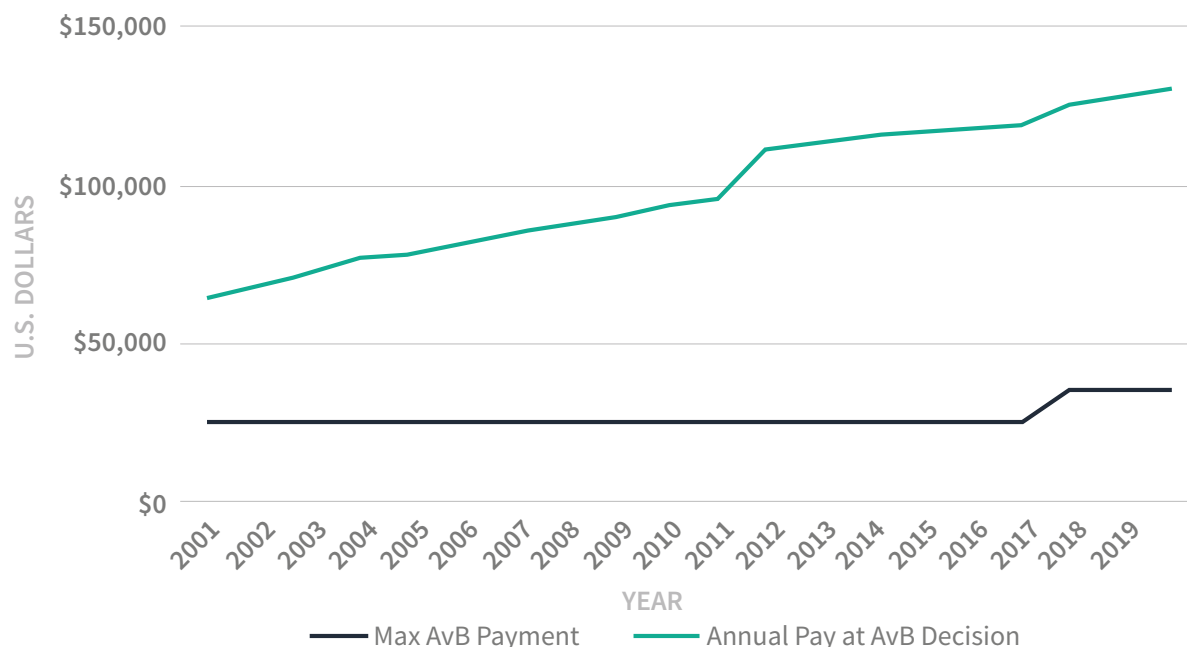
U.S. Air Force Capt. Emily Thompson, 421st Expeditionary Fighter Squadron pilot, dons flight equipment recently at the Aircrew Flight Equipment shop on Al Dhafra Air Base, United Arab Emirates.

Photo by Tech. Sgt. Katie Justen

A seasoned fighter pilot at the end of her initial pilot training commitment has to ask herself if a multi-year contract for \$35,000 per year is worth an extended commitment when she could continue serving unencumbered while retaining her high-agency. The answer is, of course, it depends. It depends on her family situation, career aspirations, expectations about future assignments, outside opportunities, and more. It is impossible to say if \$35,000 per year is enough for her to make a significant life commitment. What is clear is that in trying to achieve a stable corps of experienced pilots, Congress and the Air Force offer no better financial terms today than they did in 2000. What does that signal to the pilot weighing her options in 2020?

The AvB Program Declined in Relative Value Compared to Total Compensation

Figure 5: Declining Relative Value of AvB



Note: Average Air Force pilot compensation at the time of AvB eligibility versus maximum authorized AvB payment per contracted year of service, 2000-2019. Source: Defense Finance Accounting Service, author's calculations, and Air Force Personnel Command.²⁸

Air Force pilots are officers whose pay, like that of all officers across the military departments, is set by Congress based on rank and years of service. Totaling up base pay, subsistence pay, average housing pay, and flight pay, annual compensation for Air Force pilots more than doubled since 2000. Figure 5 shows the average total compensation at the time of the AvB offer by year along with the maximum annual payment of the pilot retention contract, \$25,000 from 2000 to 2016, and \$35,000 thereafter. These pay raises, while welcomed across the entire force, inadvertently undermined the effect of the AvB retention contract offered to initial commitment pilots.

The relative value of the AvB retention contract declined in comparison to a pilot's other forms of financial compensation. Until 2011, the average profile of an initial commitment pilot offered an AvB retention contract was a married captain (O-3) with nine years of service. This profile represented a pilot who attended pilot training for one year before beginning an eight-year service commitment, the service requirement for all pilots commissioned before FY 2000. Total pay, including base, subsistence, housing, and flight pay, was approximately \$64,000 in 2000. A \$25,000 annual payment for the pilot retention contract represented a pay increase of 39 percent.

Thanks to the military pay increases, by 2010, a captain (O-3) of the same profile made an annual salary of approximately \$96,000. Again, because the retention contract for initial commitment pilots remained at \$25,000, the bonus represented a pay raise of 26 percent. The value of the retention

contract relative to a pilot's total compensation declined by 13 percent from 2000 to 2010, making an additional commitment less attractive.

The Air Force Extended Initial Pilot Service Commitments

The Air Force announced in 1998 that it would extend the initial service commitments for pilots from 8 to 10 years, beginning with the commissioning class of FY 2000. This policy change was in direct response to the retention crisis of the late-1990s. The Air Force changed the terms of its contracts for initial commitment pilots to capture a higher return on its multimillion-dollar investments in each military pilot and to provide a more stable and predictable pilot force into the future. Beginning in 2011, the first pilots under the 10-year contract approached the end of their required service. Although the Air Force had made no changes to its AvB retention contract, the financial decision calculus for pilots had changed.

By extending the initial service commitment, the Air Force changed the profile of pilots approaching the end of their initial commitment from captains (O-3) with 9 years of service to higher-paid majors (O-4) with 11 years of service. The average salary of a pilot offered the retention contract in 2011 was now \$111,000. The AvB payment in 2011 represented 22 percent of the pilot's average salary. While military pay continued to increase, the value of the AvB retention contract relative to total compensation continued to decline, reaching its lowest point in 2016, at just 20 percent.

The analysis here does not compare lifetime earnings between the different paths available to a pilot after completing their initial commitment. However, other studies show a large and growing gap between the lifetime earnings of career military pilots and those who depart for the airlines earlier.²⁹

Beyond the declining value of the pilot retention contract since 2000—a result of inflation, pay raises across the military, and the shift to longer initial-term commitments—the choice architecture utilized by the Air Force to offer its pilot retention contract also undermines its efficacy.

The AvB Retention Contract Is a Fly/No-fly Decision

As discussed, the change in the initial commitment contract from 8 to 10 years of required service shifted the timing of the AvB retention contract offer, altering the financial calculus, but also changed the framing of the offer. The implications of this change are not only economic but carry career implications as well.

The impacts of continued service to a captain (O-3) with 9 years of service are different from those of a major (O-4) with 11 years of service. After accepting an AvB retention contract from the Air Force, the senior captain (O-3) with 9 years of service can expect flying duties to be their primary responsibility for several more years. A junior major (O-4) with 11 years of service, however, can expect significant qualitative changes to their roles and responsibilities.

During periods of healthy manning, the Air Force needs many of its pilot majors to move into non-flying roles at headquarters or offices to help manage the development and employment of the Air Force. Their input and participation in these staff roles are critical for everything from planning wars to guiding acquisitions to managing budgets. Many enterprise processes and warfighting functions benefit from the inputs of experienced pilots. Upon completion of these two-to-three-year

management roles and successful promotion to lieutenant colonel, the Air Force expects pilots to step into formal leadership positions back in operational squadrons. Pilots in command will spend the majority of their time leading the personnel of the unit. During times of healthy manning, few active-duty Air Force pilots will return to the cockpit full time as lieutenant colonels.

The Air Force does not brand the AvB retention contract as a non-flying or less-flying contract, but that is the implication, and pilots know it. Some pilots welcome these changes and the challenges that come with increased responsibility, some are ambivalent, and still others are hostile to the idea of leaving flying behind.

The Timing of the AvB Retention Contract Disadvantages the Air Force

A second weakness in the AvB choice architecture is that at the time of the pilot retention contract offer, pilots know about other opportunities as well—which airlines are hiring, how much they are paying, and where they could live, likewise, with other civilian career opportunities.

By law, only pilots who have already completed their service obligation or are within one year of completion can receive payments from an AvB retention contract.³⁰ This is a congressional restriction, and it disadvantages all the military services in their negotiation process with pilots. Service members who are within a year of completion of their service commitments are also eligible to apply for separation or retirement, if eligible. For example, pilots whose obligations end on December 31, 2020 can submit for separation on January 1, 2020, the earliest Congress authorizes the Air Force to make payments on an AvB retention contract.

Global economic shocks aside, pilots can gain a significant amount of information about employment opportunities in the civilian sector, including commercial airlines, a year or more in advance. The late timing of the AvB program provides the pilot ample time to explore employment opportunities outside the military long before receiving the Air Force's offer.

Like free agents in professional sports, pilots can gather recent data on salaries, sector growth, veteran hiring initiatives, graduate school, and more to form a reliable picture of their near-term employment alternatives. General managers and owners of sports teams dread free-agency negotiations because they not only have to find terms and compensation acceptable to the player but also terms and compensation better than competing offers. The Air Force faces a similar conundrum but with less room to maneuver.

At best, the AvB retention contract offer is available to the pilot for consideration alongside alternative opportunities in the civilian sector. The Air Force pilot can weigh the costs and benefits of various alternatives before deciding. Sometimes, however, pilots do not even receive an AvB retention contract offer before separation and acceptance of civilian employment.

Although Congress authorizes the program annually and sets eligibility conditions, the Air Force policy doubles-down on the disadvantage.³¹ For all pilots whose commitments expired in FY 2020 (October 1, 2019 to September 30, 2020), the Air Force did not even offer its pilot retention contract until January 24, 2020. Any pilots who completed their initial commitments between October 1, 2019 and January 23, 2020 could have left active-duty service before the Air Force even offered them an AvB

retention contract. Pilots who were eligible to separate from active-duty Air Force in FY 2020 had the opportunity to submit for separation 4 to 16 months in advance of the retention contract offer.

While it is true that the pilot retention contract does not change much year-to-year, and pilots can reasonably predict the terms in advance, it remains striking that the Air Force is not more active about putting its proposal forward earlier. The Air Force can offer an AvB retention contract sooner; it just cannot pay pilots until they have less than a year of commitment remaining.

An Impersonal AvB Offer

Air Force Personnel Command notifies pilots about the AvB retention contract via a mass email which directs them to perform a series of administrative steps to verify eligibility and apply. The pilot's leadership plays a minor part in the process. The only formal step which involves the pilot's leadership is when a commander signs in concurrence after a pilot has already decided to accept the offer.³²

The individual's chain of command is not formally offered an opportunity to persuade, counsel, or discuss the implications of the pilot's decision. Contrast the AvB retention contract communication mechanism with the way the Air Force runs its recruiting efforts. The Air Force uses bold, slick, and exciting messaging to recruit young people to serve in the Air Force. Charismatic, fit, attractive airmen display their passion for the military and talk about the impact their work has on national defense. The Air Force carefully crafts the messages it communicates to potential recruits, but it does none of this to retain the talent it already has. Retention contract offers have very little room for negotiation, but the same is true for enlistment contracts or officer accession contracts. The Air Force puts much effort into recruiting but markedly less into retention.

Consider the way Air Force units celebrate an enlisted airman signing a reenlistment contract. Commanders pull their members together to show appreciation for the airman's renewed commitment to the service of the country and celebrate the occasion with them. Or consider the collective celebration and attention given when the Air Force promotes an airman to the next rank. Organizations typically pause their daily activities to gather and attend the promotion ceremony to congratulate the member.

But when a pilot accepts a retention contract for three, five, or even nine years of commitment, they receive a payment from the Air Force in their checking account a few weeks later, and nothing else happens. Nobody celebrates their renewed and extended commitment to the nation or acknowledges the personal sacrifice they are making by remaining in the Air Force.

If the pilot decides to decline the retention contract offer, no further steps are necessary. A formal declination is not required. The pilot's leadership does not receive any notification. Rejecting the pilot retention contract does not imply that the pilot is leaving active duty. Still, it is a strong signal that they are uncertain about their future in the Air Force and are potentially considering other prospects.

The nature of the AvB offer process is uninspired, circumvents the pilot's leadership, and does not acknowledge the personal sacrifice the pilot makes by accepting the offer. It puts the onus on the individual to complete all the necessary steps to sign the retention contract. Despite the present-day situation, the offer process continues to signal apathy on the part of the Air Force, contradicting senior leader characterization of current pilot retention as a crisis.

In sum, the weak financial terms, coupled with a disadvantageous choice architecture, explains much of the reason the AvB program does not retain enough pilots and achieve stability for the Air Force. The modest financial means on offer are not enough to increase a pilot's financial agency to compensate for lower personal and career agency, except for those whose future vision includes the Air Force. The AvB program helps create stability for those who sign but does not shape intentions or future goals.

Army Junior Officer Retention

An Agency-Stability Exchange

The Air Force is not the only service to deal with a significant retention crisis recently. The Army struggled throughout the 1980s, 1990s, and 2000s to retain junior officers, especially its highest performers.³³ While Army officers do not usually possess technical skills that directly translate to an industry, such as Air Force pilots do with airlines, they are highly sought after by corporations for their leadership and management talents. Faced with the stick of poor Army talent management policies and the carrot of lucrative civilian employment, junior Army officers left in droves. Field-grade officer shortages were the lasting impact of this exodus. With too few officers to screen, the Army could not be selective in its promotion process. The Army's goals for promotion rates are 80 percent, 70 percent, and 50 percent to major, lieutenant colonel, and colonel, respectively. However, promotion rates exceeded those goals for the five years spanning FY 2001 to FY 2005, soaring to peaks of 97.7 percent, 88.7 percent, and 59.7 percent for the three field-grade ranks in FY 2005.³⁴ This problem continued to compound itself, later forcing the Army to choose battalion and brigade commanders from a smaller pool of talent.

Like the Air Force, the Army attempted to solve the problem with money and with increased production. To stop the hemorrhaging of junior officers, the Army offered lump-sum cash payments in FY 2007–2008 to all its junior officers commissioned across a span of seven years. These payments ranged from \$25,000 to \$35,000 and required a three-year service commitment. Costing almost \$500 million to implement, the program showed no effect on retention.³⁵ Officers who intended to remain in the service took the money. Those who planned to leave still left.

In an attempt to grow itself out of the problem, the Army overproduced junior officers and accelerated their promotions for several years, hoping that more personnel would be available for field grade ranks years later. From FY 2000 to FY 2005, the Army produced an extra 400 to 800 officers each year, an increase of 10 to 20 percent above average.³⁶ Yet, the glut of junior officers exacerbated the retention problem by reducing developmental opportunities.³⁷ Junior officers commissioned in this era shuffled through positions of responsibility in rapid fashion. They were then promoted early to first lieutenant and captain, meaning that the Army had higher numbers of captains but less experienced ones. Dissatisfied with their experience in the Army, junior officers continued to leave for civilian life at the first opportunity.

Upon reaching the threshold of a fiasco, Army leadership was finally ready to try a new approach. A group of Army economists at the Office of Economic and Manpower Analysis based at West Point proposed and gained approval for the Career Satisfaction Program (CSP).³⁸ This pre-commissioning incentive program, implemented in academic year 2005–2006 and continuing today, targets retention efforts earlier in an officer's career. Designed for West Point and ROTC scholarship cadets entering their final year of education, CSP offers a suite of non-monetary career incentives in exchange for extended service obligations. CSP's strategy is to provide career agency inside the Army at the outset of an officer's career to retain junior and field-grade officers later.

CSP creates an exchange that allows cadets to trade additional active-duty service for the ability to shape their Army careers at the start through three incentives: career specialty, base assignment, and graduate school. In exchange for these incentives, cadets can sign contracts agreeing to three more years of active-duty service. This additional commitment comes on top of what they owe for their education: five years of active-duty service for West Point graduates and four years for ROTC scholarship graduates.

For career specialties in the Army, some paths are more popular than others; for example, intelligence and aviation are perennially favored choices, and there are always more cadets desirous of these specialties than there are available positions.³⁹ Through 2005, the Army used a strict order of merit ranking for cadets to select their career path. Beginning in 2006, CSP combined merit and willingness to serve as factors for allocating career specialties. To maintain incentives for cadets to give a strong effort in their studies and training, the Army limits this exchange to 25 percent of the career specialization slots. For every 100 aviation positions available to cadets, CSP distributes 75 according to merit rankings alone. CSP allocates the remaining 25 according to merit and willingness to commit to more years of service. This mechanism increases agency for cadets with a strong future vision of an Army career but who lack the requisite merit.

CSP allows cadets to obtain their choice of career path in the military, and the Army gains commitments of service and future stability. It is critical to emphasize that this aspect of CSP costs no money. CSP does not change the Army's planned allotment of specializations, just the allocation mechanism. CSP creates a system that allows cadets to act to obtain their goals while making future commitments intentionally. Critically, a CSP contract does not commit the Army to anything else about the officer's future career. The Army makes no promises about what happens apart from the initial career match.

Once CSP allocates career specialties, the next decision in an officer's career is the basing assignment. As with career specializations, cadets have strong preferences over where they begin their Army

service for innumerable personal and professional reasons. CSP allocates duty locations using merit and willingness to commit to additional service. In exchange for three more years of service, cadets contract for their choice of duty location, pending available space. Like career specialty contracts, the contracts for duty locations come at no financial cost, and only when the Army has the flexibility to accommodate choices.

The final CSP incentive was a graduate school option.⁴⁰ Cadets contracting for this option gained the opportunity to attend a fully-funded civilian graduate school program in the future after completion of their required active-duty service and another three-year service obligation. Upon completion of their extended commitment, the officers had three options: separate from active-duty service, decline graduate school but remain on active duty, or exercise the two-year graduate school option. If the officer selected the graduate school option, then the Army paid their salary and tuition during school, and the member incurred a six-year additional commitment upon completion of their education. Cadets who contracted for a future graduate school opportunity commit to a seven- or eight-year service period upfront and another eight years to exercise the education opportunity. In the end, the Army stood to gain 15 to 16 years of total service for each graduate school contract.

The Army discovered a healthy appetite for career agency through CSP. With no guarantee or promise from the Army about what their extended service commitments would entail, 5,698 ROTC and West Point cadets participated in CSP from 2006 to 2009. In response to the requests of its cadets, the Army changed CSP to allow them to contract for up to two CSP options instead of only one, thereby stacking two consecutive three-year commitments. Out of 13,642 total eligible cadets, 42 percent took at least one of the CSP contract options. CSP solidified a total of 17,596 more years of service commitments, for no initial cost to the Army's budget.⁴¹

The only expenses came when officers exercised the graduate school option. However, paying for two years of graduate school purchased six years of a field-grade officer's time in the future. The Army already pays hundreds of thousands of dollars to educate West Point and ROTC scholarship cadets for four years but only requires four to five years of active-duty service in return. Paying salary and graduate school tuition to lock-in a field grade officer to a long commitment stabilized Army manning and is an investment in human capital.

CSP continues to be a cornerstone of Army officer retention today and has many lessons that are useful for rethinking how the Air Force approaches retention. First, it takes advantage of the officer's time preferences. It succeeds because it increases a service member's career agency inside the Army when officers need agency most—at the beginning. It creates a market for cadets to exchange longer service commitments for the careers they want. CSP shows that cadets have strong desires about their active-duty paths, which affect their future trajectory and career satisfaction. Cadets cannot realize their future vision of leading an infantry company into combat if they cannot obtain an infantry slot at the beginning. Because participation in CSP is not obligatory but does offer candidates more control over their professional lives, it incentivizes those who have the intention to shape their futures inside the Army.

Second, CSP takes advantage of the Army's time preferences. The Army values stability in its pool of seasoned officers to have quality staff officers and battalion commanders in the future. It cannot acquire them elsewhere; it has to build and keep them. While the Army cannot guarantee anything about a cadet's military future 5, 10, or 15 years after graduation, it can afford to trade off short-term management to cadets in exchange for long-term control of their careers later.

Third, the Army offers CSP when it has the most flexibility in an officer's career: at the beginning. Once an officer marches down a career path, even a little way, it becomes challenging to change course later. There are only a few opportunities for Army officers to transition into different specialties and usually only into small subspecialties such as a strategist, a civil affairs officer, or a foreign area officer. Other kinds of career transfers are challenging to do at any scale for captains and field-grade officers. For basing preferences, few Army bases can absorb more majors or lieutenant colonels and give them all meaningful work. In contrast, most Army bases can employ some extra second lieutenants and develop them. The relative lack of career flexibility for mid-career officers makes it complicated to implement CSP-like markets for them. Thus, CSP offers flexibility early in an officer's career when it is easier for the Army to accommodate their desires and provides the satisfaction of choosing one's own path.

Fourth, CSP does not throw money at a problem by offering cash transfers to officers intending to remain in the service regardless. Instead, it aligns the Army's needs with the aspirations of its officers, allowing an exchange of time for choice. Cash transfers will not retain disgruntled officers, at least not at the levels the Army can afford or Congress would authorize. The money the Army does spend on CSP is a human-capital investment. The officer who returns to the Army after graduate school is a more productive field-grade officer with a long-term commitment. Cash retention contracts are weak incentives, and the process to adjust them is subject to an unpredictable Congress.

Finally, the CSP market adjusts on its own and does not require year-to-year tinkering. The preferences of the cadets set the market and prices. The Army accepts or rejects contract offers based on available supply and demand. If Fort Shafter, Hawaii is a highly desirable assignment, then cadets outside the top performance tier will need to sign a CSP contract to the Army to get it. If preferences change and Fort Polk, Louisiana becomes a top choice, then prices adjust accordingly. Similarly, aviation is a sought-after career in the Army, and cadets take up every slot in the CSP allocation with contracts. Were artificial intelligence and robotics to begin edging pilots out of the cockpit, demand may shift to cyber career fields, or something else. The CSP market adapts and allocates officers where the Army needs them.

Conclusions and Recommendations

In the four years since Congress denied the request for a \$60,000 AvB payment authorization, the Air Force set about making sweeping changes to improve its airmen's quality of life and quality of service, for example, by offering more generous parental leave and infusing squadrons with more resources. It will still require time for these initiatives to take hold, but they will likely have some positive effect on retention, considering the reasons pilots give for leaving the service. Still, pilots are unique in that there is latent but robust demand from airlines for their skills that will reemerge once the pandemic passes. Existing retention initiatives are not enough. The Air Force needs to continue to prioritize pilot retention efforts and not allow the reprieve from Covid-19 to distract it.

The analysis of the AvB retention contracts and the Army's recent approach to its retention crisis reveals new strategies the Air Force should implement to correct the problem of pilot retention. These strategies keep the agency-stability dilemma at the fore and look for ways to exchange career agency in the Air Force for extended commitments as well as influence a pilot's intention and future visions of themselves in the Air Force.

These recommendations require trade-offs and compromise but do not cost any additional money. Zero-cost measures are necessary because Congress has expressed skepticism about raising the maximum AvB payment limits, and it approved over 3 trillion dollars of federal spending to mitigate the effects of the Covid-19 pandemic, putting the U.S. federal debt on track to exceed GDP for the first

time since World War II.⁴² Besides, the last CSAF was correct that the Air Force cannot compete on financial terms with the airlines but on the value proposition of being a career military pilot. The Air Force should not delay implementing these recommendations, which build upon retention initiatives undertaken over the last four years. When implemented, the recommendations will give the Air Force increased predictability and stability in its pilot corps, and pilots stand to gain more agency in their careers, improved financial health, and more respect for their sacrifices.

Recommendations



Capt. Lauren Kram, assigned to the 13th Bomb Squadron, poses for a portrait on Feb. 19, 2019. Kram is one of six qualified female pilots assigned to Whiteman Air Force Base, Missouri.

Photo by Staff Sgt. Kayla White

1. EMPOWER SQUADRON COMMANDERS IN THE AVB PROCESS

The Air Force currently places commanders on the periphery of the AvB retention contract process. Squadron commanders should be at the center of retention efforts. Following the former CSAF's guidance about squadron revitalization, squadrons should be responsible for implementing the AvB program. According to survey data, squadron commanders are the leaders that pilots trust the most.⁴³ Commanders above that level do not enjoy the same degree of trust, nor do program managers at Air Force Personnel Command. Squadron commanders know their pilots and are in the best position to make the offer. The existing system, in which the Air Force makes its AvB offer via an impersonal email from a far-away program office, does not convey respect. If the message came from a trusted leader, knowledgeable about a pilot's aspirations and skills, it would. Squadron commanders are also best positioned to change the Air Force's culture surrounding pilot retention through public recognition of those who commit to extended service.

Air Force squadrons regularly pause their activities to conduct public recognition ceremonies such as promotions, reenlistments, awards, graduations, and retirements. Their purpose is to honor an airman's exemplary behavior and selflessness publicly. These recognitions are deeply ingrained in military culture, so much so that service members often attend these important ceremonies for honorees they do not know. Senior officers routinely carve out large swaths of their limited time and often travel long distances to officiate. Air Force units gather and celebrate at these events, signaling to the member that the Air Force values their actions. More importantly, the ceremonies also indicate to other airmen, particularly junior ones, the kinds of behavior and achievements the Air Force respects. If a commander stops the squadron's work for several hours to administer the oath of enlistment to a senior airman in front of family and fellow airmen, it must be important.

But when an F-22 pilot, an AC-130 fire control officer, or an E-8 air battle manager signs a multiyear AvB contract, sacrificing time with their family and economic opportunity in civilian life, the Air Force does nothing. The apathy and indifference displayed toward the individual's sacrifice and commitment contrasts sharply with similar acts which the Air Force publicly lauds. This disinterest is a massive disconnect from the words expressed by Air Force senior leaders in testifying before Congress about the critical importance of retention.

With a little imagination, the Air Force can bring its values in line with its words. Every signed AvB retention contract is a cause for celebration and recognition. Pilots under AvB contracts increase the nation's readiness and lethality and stabilize the Air Force's future manning. Pilots do not stay in the Air Force for financial gain. Their opportunity cost for remaining on active duty represents millions of dollars. An acknowledgment of each individual's lengthy commitment would demonstrate respect, be a powerful signal to other pilots and officer aircrew, and is the right thing to do.

Costing nothing to implement except time and attention, putting the squadron commander at the center of the AvB process, and publicly recognizing a pilot's extended commitment to the country, the change would be a wild success if it increased retention by even a small percentage. In FY 2019, 364 initially eligible pilots declined to sign an AvB retention contract. Convincing only 2 percent of that group, seven pilots, to commit to additional service would save the Air Force at least \$40,000,000.⁴⁴

2. OFFER THE AVB CONTRACT EARLIER

The amount of money offered in an AvB retention contract matters a lot, but so does the offer's timing. How and when the Air Force presents an AvB retention contract can make it more or less attractive to a pilot. Moving the offer's timing to a much earlier point in a pilot's service will increase its value without changing the monetary terms.

Current law not only sets the contract's value but restricts the military services from offering AvB contracts until the member is one year from completing their initial commitment. The Air Force can ask Congress to remove this restriction. It should not matter to the Air Force or Congress when it makes AvB payments to pilots. What matters is the pilot's additional commitment beyond the initial service obligation.

The most advantageous time to offer an AvB retention contract would be when a pilot attains an advanced qualification, such as an instructor pilot. Depending on the aircraft and mission, most pilots will be able to accomplish this qualification within five to six years, marking them as safe and effective. An instructor pilot can affect broader aviation operations by teaching junior pilots and

commanding multiship missions. Achieving these career milestones demonstrates continued and future value to the Air Force.

Once a pilot attains an instructor qualification, their squadron commander should offer an AvB retention contract that begins paying the pilot immediately. Instead of waiting until the pilot completes their 10-year commitment to pay them, provide the financial compensation up front—the total amount would not change, just the timing of the payment. This recommendation holds for all aircrew covered under congressional AvB authorization. Timing the AvB retention contract to this career milestone brings several advantages.

Accelerating the timing of the AvB retention contract links the retention decision to a positive experience in the member's Air Force career. Attaining an instructor qualification is a significant career milestone demonstrating the Air Force's trust in the pilot and their potential for continued professional growth. The pilot will likely have deployed for contingency operations and had a chance to see their critical role in national defense. This phase of a pilot's career is one of the most rewarding and the best time to offer an AvB retention contract. Decoupling the pilot retention contract from the significant career change that comes as a field-grade officer also strengthens the offer.

The Air Force's information disadvantage vanishes when the AvB program timeline is accelerated. A pilot does not know how strong airline hiring will be or what other economic opportunities might be available when their 10-year commitment expires. The Air Force will be able to make its case for a longer commitment before the pilot reaches a state of high agency and is distracted by other opportunities. Pilots already agree to a 10-year initial commitment without knowing much about what their military career will entail. Repositioning the AvB retention contract offer to a point when the pilot has some experience allows the Air Force to elicit an early signal of the pilot's long-term intentions.

An earlier offer also takes advantage of each side's time horizon. The Air Force knows it will be defending the nation's interests today and preparing to do so far into the future. It routinely makes substantial investments in people, technology, and organizations that will not pay off until years later, maybe never. Through the AvB retention contract payment to a newly minted instructor pilot, the Air Force buys the option to have that pilot for several years beyond the initial contract. The Air Force always retains the ability to reduce manning which exceeds congressionally-authorized levels. In the event a pilot becomes medically disqualified later, the Air Force can still utilize that individual in staff and non-flying duties.

The financial value of an earlier AvB retention contract payment is higher when the Air Force offers it earlier. An earlier payment creates more options to save, invest, pay off loans, and make significant purchases, and it hedges against future inflation and contingencies. An individual's discount rate is the percentage of value lost by delaying a payment into the future. The Department of Defense (DOD) calculates a personal discount rate, currently 6.75 percent, to determine how much money service members can take from their future retirement pay in a lump sum.⁴⁵ In simplest terms, for a scheduled payment of \$1,000 next year, the government would agree to pay a discounted \$932.50 today, understanding that money now is more valuable than money later. Personal discount rates work in the opposite direction as well, and therein lies the opportunity for Congress and the DOD to strengthen the attractiveness of the AvB program.

Using the same DOD discount rate, an AvB payment made five years earlier increases its value by 39 percent. In other words, pilots taking a \$35,000 AvB payment today would value the same payment at \$48,000 if they could have received it five years sooner. One published study of 11,000 military officers estimated their average present value discount rate to be between 10 and 13 percent, indicating an even higher preference for earlier payments than the DOD calculates.⁴⁶ This higher discount rate suggests that many pilots would value the maximum AvB payment 61 to 84 percent higher to have it now rather than in five years or consider it equivalent to a payment between \$56,000 and \$64,000 five years in the future.

Earlier AvB payments will likely have a more significant effect on junior pilots' well-being than the same money offered later when their compensation is higher, and the opportunity to use the payments diminishes. Earlier AvB payments could be used to settle college debts, obtain childcare, support a spouse's education, and provide more time for the money to grow in retirement accounts. These are needs that young pilots have today, and some would be willing to pay the Air Force later to get the financial boost now.

Moving the AvB payment authorization up earlier creates additional flexibility as well. Currently, the Air Force offers its AvB payments only during the time of the pilot's extended commitment, either in a partial lump sum and reduced annual payments or paid in full annually. Moving the AvB timing up earlier would allow the Air Force to spread the payments over more years, allowing pilots to optimize retirement investments or other tax-advantaged savings programs. For example, instead of receiving \$35,000 per year for five years, newly minted instructor pilots five years into their initial contracts could sign the same AvB contract but elect to receive \$17,500 per year for 10 years. Not everyone will choose this system of payments, but the option will appeal to some.

This recommendation is the most challenging to implement as it requires organizational agility and congressional authorization. Adjusting AvB eligibility to pay pilots earlier in their careers in exchange for service later creates more leverage for the Air Force and more value for pilots. It squeezes the most value out of defense budgets, which is critical right now. The AvB limit may still need to increase, but the Air Force should improve the choice-architecture first, and Congress should grant that flexibility.

3. CREATE AN ASSIGNMENT-FOR-SERVICE MARKET AT PILOT TRAINING

New classes of 25 to 30 pilots begin every few weeks at each of the Air Force's four pilot training bases. Currently, the Air Force uses a combination of academic performance, flying proficiency, and commander's rating to score and rank students during pilot training. When the class approaches graduation, the Air Force provides a list of aircraft-location assignments. The students submit a preference list of which aircraft and which locations they desire. The top-rated pilot receives their most desired aircraft and location from what is available to their class. Each subsequently ranked pilot receives their most desired aircraft and location from what remains. Like Army cadets, new Air Force pilots have strong and varying visions for their military futures. Aircraft and basing assignments are monumental decisions for many of the young pilots.

The type of aircraft pilots fly initially after training sets a course for their career that is challenging to alter later. Chance, however, plays a significant role in selecting that course. For example, an adept pilot desiring to operate the most advanced fighter in the inventory might not have the opportunity if

their peers were unusually proficient and wanted the same. Had the pilot been grouped with another class, they may have been able to continue their desired path in the Air Force. Similarly, a student matched to an assignment in the United States may have wanted overseas basing for the cultural experience. Perhaps that opportunity would have been available in an earlier or later class. The Air Force flies over 40 different aircraft at dozens of bases, and so not all assignments will be available to every class of new pilots.

At this early phase of a pilot's career, it does not matter to the Air Force which aircraft pilots fly, or where. So long as the new pilot is qualified for the duty and there are sufficient junior pilots at each unit, the Air Force's requirements are satisfied. During pilot training, the Air Force has the most flexibility to accommodate the wants of its young, undifferentiated pilots. The Air Force should take advantage of the situation to create an exchange allowing determined pilots to trade future service for the aircraft or location they covet. Using a combination of merit and a pilot's willingness to contract for additional years of service in the allocation of aircraft and basing assignments would improve long-term retention and future force stability. Facilitating higher agency to pilots willing to serve longer commitments increases their satisfaction.

One way to implement this exchange mechanism would be to designate a fraction of the assignments to be allocated via merit and contracts. Pilots desiring a particular aircraft or location can stipulate in their preferences a willingness to serve additional years if they cannot obtain the desired aircraft or location on merit alone. For example, imagine the sixth and seventh-ranked pilots both wanting to fly a C-17 transport airplane, but only one was available to them. By order of merit, the sixth-ranked pilot would match with the C-17. But, if the seventh-ranked pilot were willing to commit to additional years of service, and the sixth was not, the seventh-ranked pilot would match with the C-17 instead.

An assignment-for-service exchange gains additional stability for the Air Force and increases the satisfaction of those pilots most willing to serve longer. From the Air Force's perspective, it does not matter which pilot, the sixth- or seventh-ranked one, is assigned the C-17. Pilots who participate in this exchange are those willing to commit to long careers in the Air Force. Under the current system, the Air Force has no way to identify them. Under an exchange of service for assignment preference, the Air Force can increase the agency of its most committed pilots and gain stability for the future.

Considering the desire of thousands of Army cadets under CSP to trade three more years of service for more agency in the assignment process, it is highly likely that many new pilots would do the same, at no financial cost to the Air Force. The pilot training assignment match is the most advantageous moment for the Air Force and for pilots to contract for an extended commitment. A CSP-like mechanism during pilot training grants more career agency inside the Air Force targeting pilots with intentions of a long future in the Air Force and gives them the means to create that future.

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