The Glass Ceiling for Remotely Piloted Aircraft

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Those who by valorous ways become princes, like these men, acquire a principality with difficulty, but they keep it with ease.

—Niccolò Machiavelli, 1513

Though written 500 years ago, Machiavelli's *The Prince* remains a seminal treatise on the art of acquiring and maintaining political power. The book contains many aphorisms, but the observation that acquiring power is more difficult than losing it reflects the organizational politics of the US Air Force. The service gained its independence in 1947 due in no small part to the valor of pilots during World War II. Since then, aviators have dominated Air Force leadership. Indeed, a nonpilot has never led the service.

The selection of the individual who runs the Air Force is important because the development of new ways of fighting depends on the support of senior leaders. It is human nature to pursue initiatives that reinforce vested interests rather than adopt disruptive new weapons and doctrine. Given that tendency, Stephen Rosen, a leading scholar on military innovation, observes that military organizations rarely embrace new ways of fighting without the creation of new promotion paths to senior ranks. In fact, Rosen says that innovation within the armed forces normally proceeds "only as fast as the rate at which young officers rise to the top."[1] Advocates of change find protectors and patrons, experiment doctrinally, and slowly climb the promotional ladder, contending with rivals for control over the direction of a military service.

In line with Rosen's theory, Gen Norton Schwartz, Air Force chief of staff from 2008 to 2012, championed personnel policies that sought to build a remotely piloted aircraft (RPA) constituency. In October 2010, he directed the creation of a new career field—18X, RPA Pilot.[2] However, the initiative to establish a viable promotion path for this new way of fighting appears to be faltering.

In June 2011, Secretary of Defense Robert Gates, citing low promotion rates for RPA operators, directed the Air Force to "increase opportunities for highly skilled members of the UAS [unmanned aircraft systems] military community to reach senior leadership positions," emphasizing that "General Officers originating from this community are critical to our institutional goals."[3] In September 2012, Senate Majority Leader Harry Reid and Carl Levin, chairman of the Senate Armed Services Committee, sent a letter chronicling persistently lower and declining promotion rates for officers in the RPA career field to the Government Accountability Office, calling for an investigation of Air Force personnel policies. The lawmakers noted that during the last five years, promotion percentages for RPA personnel to the rank of major dropped from 96 to 78 percent, compared with a range of 91 to 96 percent for Airmen in other career fields. Reid and Levin implored, "Given the extent to which we increasingly depend upon RPA personnel to conduct military missions of strategic importance to our nation, we believe that we must take rapid and proactive steps to ensure that these personnel are rewarded, rather than disadvantaged for their choice in career path."[4]

Responding to Reid and Levin's call for an investigation, an Air Force spokesman acknowledged institutional "challenges" and noted that promotion rates for new career fields often take time to stabilize.[5] Certainly, low promotion rates are not surprising in light of the Air Force's initial decision to staff its RPA force in an ad hoc fashion with medically disqualified pilots and nonvolunteers, many of whom were not necessarily stellar performers from other aviation communities. One Predator commander lamented that his team consisted of the "sick,

lame, or lazy."[6] In a 2008 speech, General Schwartz admitted that Air Force personnel policies had turned the RPA community into a "leper colony," acknowledging the institutional "stigma" associated with RPA assignments.[7] Ultimately, his vow to address the issue led him to create the 18X career field. Moreover, the lack of career-broadening and professional military education opportunities—the result of personnel policies that for years prevented permanent changes of station—may also be to blame.[8]

One may reasonably believe, as the Air Force spokesman suggested, that promotion rates to field grade ranks may bottom out and improve. The 18X career field will develop Airmen with more competitive records. However, the situation is quite different for promotion to flag rank. By design or effect, a bottleneck exists that guarantees a glass ceiling (i.e., a barrier to advancement) for RPA officers. This article describes that bottleneck and suggests that the Air Force take action to break the glass ceiling to flag rank.

Specifically, it seeks (1) to help the Air Force identify and remove a key obstacle to institutionalizing RPAs, a new way of fighting that has proven indispensable over the last decade of war, and (2) to inform service efforts to meet a provision of the National Defense Authorization Act for Fiscal Year 2013. Not satisfied with the Air Force's response to Reid and Levin's letter to the Government Accountability Office, Congress enacted a legislative requirement for the service to submit a report no later than June 2013. It must include detailed analysis of the reasons for persistently lower average promotion rates for RPA pilots, a plan to raise such rates, and a description of the near-term and longer-term actions that the service intends to undertake to implement the plan.[9] From an institutional perspective, sections of this article may make for uncomfortable reading. However, like a fighter pilot's post-mission debriefing, this frank discussion wishes to help build a stronger Air Force.

Undoubtedly, building a constituency for disruptive innovation is difficult—just look at the birth of our own service. Institutionally, the

Army did not like Billy Mitchell's tone or his message about the airplane, a new technology that revolutionized warfare. But the Air Force has the enviable quality of inspiring leaders who embrace technological change and do not shy away from tackling institutional challenges. As Gen Mark Welsh, the Air Force chief of staff, observed, our service remains "fueled by innovation."[10]

To emphasize the point, disruptive innovation is nothing new for the Air Force. The service faced a remarkably similar issue in the 1950s regarding adoption of the intercontinental ballistic missile (ICBM), the first unmanned revolution in airpower. At the time, some officers considered the ICBM a threat to the Air Force's "essence."[11] Yet, inspired leadership prevailed. The second half of this article tells that story, describing how Gen Thomas D. White, vice-chief (1953–57) and fourth chief of staff of the Air Force (1957–61), shepherded the ICBM into the service's inventory. If history is any predictor, the Air Force will build a strong and healthy RPA community.

The Path to Flag Rank

For pilots, the path to general officer goes through command. The Air Force's official career path suggests that pilots must command an operations group and a wing (or serve as a wing vice-commander) to become competitive for flag rank (see figure below). A perusal of the biographies of active duty generals available on the Air Force's official website reveals that wing command is not only highly desired but also evidently required for promotion of a pilot to brigadier general.[12] All of the generals served as wing commanders, with the exception of a physician/pilot who headed a medical group and then became a command surgeon.

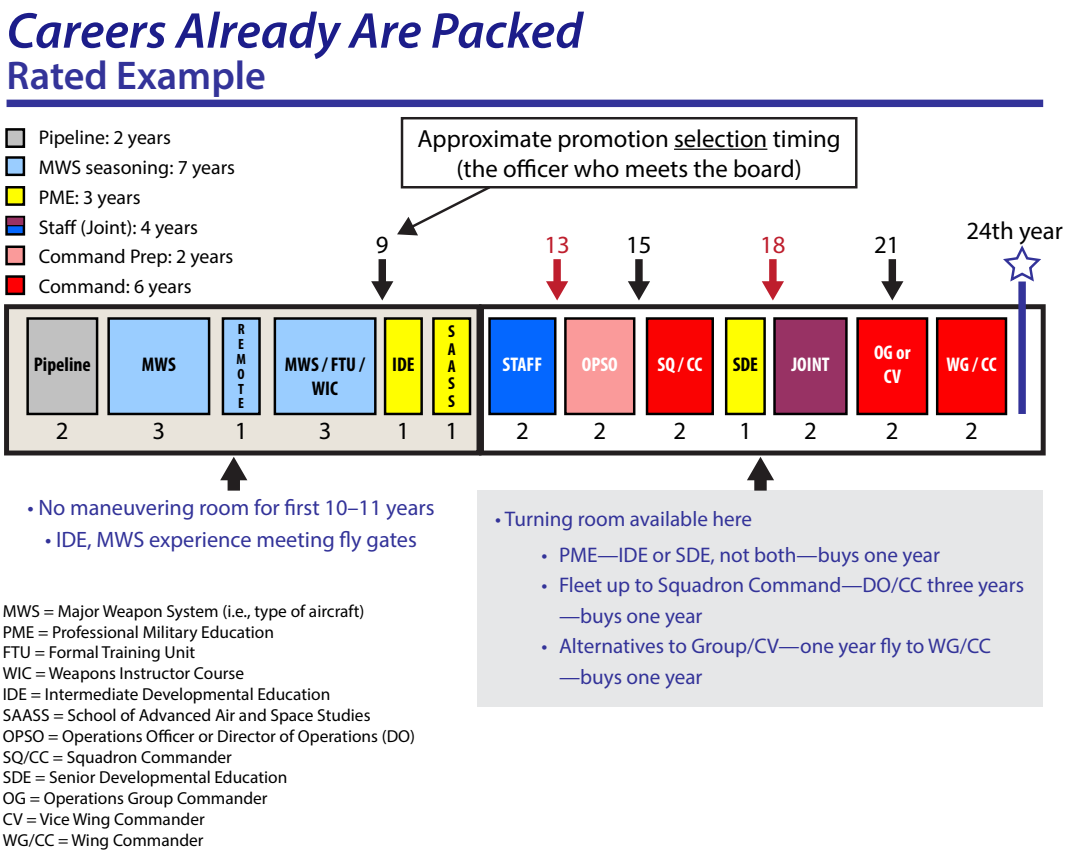

Figure. Rated-officer career path to selection board for brigadier general. (From Greg Lowrimore, Air Force Colonel Management Office, *Wing/Group Command PCT* [Washington, DC: Headquarters Air Force, 8 April 2013], 33.)

An examination of the lineage of Air Force chiefs of staff and Air Combat Command (ACC) commanders offers further evidence of wing command as an indispensable prerequisite to rise to the top levels of the service. *Every* chief of staff during the last 50 years commanded a wing during his rise. So too did *every* ACC commander—10 since the command's creation in 1992. One should note that selection of the individual who leads ACC is especially important because of the command's size—the largest in the Air Force. Additionally, ACC serves as the core function lead integrator for five of the Air Force's 12 core

functions.[13] In that capacity, ACC acts as the primary steward for the development and acquisition of combat aircraft, including RPAs.

The Wing Command Bottleneck

The way that the Air Force chooses to field its RPA force limits wing-command opportunities for RPA Airmen, thus creating a career-path bottleneck. Despite fast-paced growth over the last decade that led the RPA community to balloon into the second-largest group of aviators in the Air Force, RPA pilots have the fewest opportunities for wing command.[14] To facilitate the rapid expansion of the RPA force to support Operation Iraqi Freedom as well as Operation Enduring Freedom, the Air Force centralized RPA management, establishing one massive RPA wing at Creech AFB, Nevada. The 432nd Wing commander has responsibility for two operations groups and eight squadrons. That individual also serves as commander of the 432nd Air Expeditionary Wing, a position that extends his or her span of control to operations on four continents, including a half dozen deployed landing and recovery units. In contrast, fighter wings normally consist of two or three squadrons.[15]

With the 432nd Wing commander's span of control stretched to the maximum, the Air Force started tucking isolated RPA units under wings dominated by other aircraft. In 2008 the Air Force stood up two RPA squadrons under the 27th Special Operations Wing at Cannon AFB, New Mexico. In 2009 the service placed two RPA training squadrons under the 49th Fighter Wing (an F-22 wing) at Holloman AFB, New Mexico.[16] The year 2010 saw the Air Force assign an MQ-9 Reaper squadron to the 28th Bomb Wing at Ellsworth AFB, South Dakota, and another to the 509th Bomb Wing at Whiteman AFB, Missouri.

As a rule, wing commanders of mixed wings come from the community that supplies the preponderance of forces. Officers from the minority are relegated to vice wing command and operations group command. Cases in point include a special operator who commands

Cannon AFB, a fighter pilot in charge of Holloman AFB, and bomber pilots who head Ellsworth AFB and Whiteman AFB.[17]

The Air Force plans to stand up future RPA squadrons almost entirely under the National Guard. Although this makes sense in terms of preserving talent as the Guard's fighter squadrons close, the plan contributes to a systematic disenfranchisement of RPA personnel from the senior ranks of the active force.[18] Indeed, the Air Force's approach to RPA basing—standing up isolated RPA units dominated by other communities and disproportionately sending RPA units to the Guard—amounts to the organizational equivalent of political gerrymandering. This process results in malapportionment of institutional power that overwhelmingly favors fighter pilots. RPA personnel enjoy one wing command: Creech AFB.[19] Fighter pilots, though, control 26.[20] In other words, the ratio of wing-command opportunities for RPA pilots versus those who fly manned combat aircraft is a staggering 1-to-26! To put that ratio into perspective, consider the fact that the Air Force has nearly twice as many RPAs than bombers in the active inventory, yet bomber pilots enjoy three times as many chances for wing command.

An analysis of the ratio of fighter-wing commands to squadrons over time underscores how fighter pilots have retained control of the pathway to senior ranks despite the declining structure of the fighter force. In 1964 the Air Force fielded 79 tactical fighter squadrons and 21 tactical fighter wings—a ratio of 3.76 to 1. Today, the service operates 54 fighter squadrons, significantly fewer than in 1964, yet, as mentioned above, it has 26 fighter wing commands—a ratio of 2.06 to 1.[21]

A study conducted in 2001 noted that fighter pilots held 67 percent of the four-star general officer positions and commanded 63 percent of all major commands, yet they comprise only 5.3 percent of the force. Furthermore, it observed that "our last eight USAF Chiefs of Staff have been fighter pilots [nine, if one counts Gen John Loh, an interim chief]. They constitute an elite group which influences, if not outright controls, every aspect of the Air Force institution."[22]

Since 2001 fighter pilots have largely consolidated their institutional hold on power.[23] Three more fighter chiefs have followed although the dynasty was temporarily interrupted when Secretary of Defense Gates fired Gen T. Michael Moseley and installed General Schwartz, the first person without fighter-/bomber-pilot credentials to become chief. In summary, fighter pilots disproportionately influence the vision, doctrine, budgeting, program priorities, and direction of the Air Force.

RPA Airmen: Ineligible to Command Their Own Wings

Perhaps reflecting the odds of an RPA Airman being selected for wing command, the Air Force's latest Command Screening Board, which met in October 2012, included categories for fighters, bombers, mobility aircraft, and even Airborne Warning and Control System aircraft but did not include a category for RPAs. Curiously, only officers who transferred from fighters to RPAs late in their careers made this year's command list. In other words, they competed for a command slot within the fighter category. The problem with that policy is that under current eligibility rules, 18X Airmen who spend their careers flying RPAs are not eligible for consideration. The board's announcement letter established the following recency-of-experience criterion for command eligibility: "Flying: Minimum of 50 hours within the last 7 years in category as of 1 Aug 2012. For example, in order to command a fighter group/wing, the member must have flown 50 hours minimum in a fighter aircraft within the past 7 years. Exception, officers who have been flying only training aircraft within the last 7 years may compete in the category they had previously flown in."[24] RPA flight time did not satisfy the recency-of-experience requirement.[25] The Air Force makes an exception for officers who fly training aircraft but not for RPA flight time.

Even officers who transferred to RPAs from fighters late in their careers find themselves hard pressed to satisfy the recency-of-experience criterion. Only those who go directly from fighters to command an RPA squadron are eligible to compete for wing command, and they can

compete on just one board because their recency of fighter experience expires. The lack of an RPA command category and the enforcement of a manned-flight requirement for command serve to further restrict the promotion bottleneck put in place by the Air Force's approach to RPA basing, thus effectively creating a glass ceiling.

"Too Big to Fail" Corporate Strategy

As Rosen's theory predicts, fighter pilots have prioritized the pursuit of manned fighters ever since they wrested the institutional helm of the Air Force away from bomber pilots in the early 1980s.[26] Flush with cash from the Reagan administration's 213 percent increase in defense spending, they went on a fourth-generation-fighter spending spree, adding over 1,000 platforms to the service's inventory.[27] The fighter-pilot-dominated leadership announced that the service would henceforth measure and express force capability in terms of "fighter wing equivalents."[28]

Subsequently, the Air Force declared the acquisition of fifth-generation fighters—namely, the F-22 and the F-35—its highest priority. ACC's *Strategic Plan: Securing the High Ground*, released in March 2012, not only reaffirms the Air Force's commitment to acquiring the F-35 but also declares the development of a sixth-generation fighter a "must."[29] Tellingly, the plan makes no mention of RPAs despite the promising record they have amassed over the last decade.[30]

Despite congressional concern over RPA integration, the Air Force has taken five actions that suggest a reversal of remotely piloted inroads into its predominantly manned aircraft force.[31] First, in January 2012, the service announced that it would discontinue procurement of the Global Hawk Block 30 and mothball its existing fleet. Remarkably, the plan included a provision to roll several Global Hawks currently in production directly off the assembly line into storage.[32] Second, in February 2012, the Air Force ended the MQ-X program, the linchpin of the medium-sized RPA development under the *Unmanned Aircraft Systems*

Flight Plan.[33] Third, the Air Force halved its planned end acquisition of MQ-9 Reapers. Instead of 48 in each of the years from 2012 to 2017, the service will purchase just 24. Fourth, in February 2013, the Air Force revealed plans to cancel its Global Hawk Block 40 program. Fifth, the Air Force recently announced plans to "[divest] the UAV (unmanned aerial vehicle) Battlelab in [fiscal year 2014]."[34] Additionally, it is exploring ways to "revisit" (i.e., reduce) the Joint Requirements Oversight Council's directive for the service to field 65 remotely piloted combat air patrols.[35]

These efforts are part of what one can call a "Too Big to Fail" corporate strategy.[36] The service has essentially linked its future to one manned combat platform—the F-35—while slowing the development of RPAs, a potential alternative. Unfortunately, F-35 costs continue to spiral upwards, making the jet increasingly unaffordable. Moreover, attempting to make the fighter too big to fail has ironically rendered the program a bigger target for cuts, given the impending fiscal austerity. Few people believe that the F-35 program will escape substantial reductions. In fact, if the Joint Strike Fighter suffers the same fate as the F-22 and the B-2, then the Air Force will receive less than one-fourth of its planned purchase.[37]

Learning from the 1950s

During a speech in 2009, General Schwartz insightfully observed that the Air Force is at a point of inflection: "Now, it is clear that we must reconsider the relationship between people, machines, and the air. The technology that initially allowed us to slip 'the surly bonds of Earth' has progressed to the point where pilots on the ground can now remotely operate highly capable, highly maneuverable, and highly versatile unmanned vehicles."[38] The general noted that the Air Force faced a similar choice 50 years ago: "There was a time when some in our Air Force thought that missiles and other unmanned vehicles were

not a good fit into our core mission, and thus had no place in our Service," Schwartz said. "We seek to learn from our shortcomings, and to avoid them in the future; but, the storied history of the United States Air Force suggests that much of what we have done are things that we *do* want to repeat" (emphasis in original).[39]

In the 1950s, the "bomber mafia," led by Gen Curtis E. LeMay, commander of Strategic Air Command (SAC), dominated the service. The bomber was more than a weapon to LeMay. In the words of one historian, it represented "a fighting machine to which he was deeply wedded emotionally, an arm in which he had unshakable faith."[40] The general predicted that the Atlas, America's first ICBM, would be an extravagant boondoggle and not perform as anticipated: "Missiles, he argued, would gain only a 'satisfactory state of reliability' after 'long and bitter experience in the field.' "[41] The catch-22, of course, was that LeMay consistently put ballistic missiles last among SAC's funding priorities; consequently, the Atlas wouldn't get a chance to gain the "long and bitter experience in the field" that he demanded. The general fanned the embers of resistance among the bomber coterie, who occupied virtually all of the service's leadership spots.

Fortunately, a visionary leader—Gen Thomas D. White—recognized the ICBM's promise and in May 1954, over LeMay's heated objection, hoisted the missile to the top of the service's priority list for research and development.[42] Six months later, he declared that the Atlas program should have as its immediate objective the achievement of an initial ICBM operational capability, thus making production as well as research and development the Air Force's top priority.[43]

Interestingly, White was not a bomber pilot. He spent much of his career as an attaché, a specialty that considers flying secondary duty. His nontraditional background made him more willing to discount organizational costs associated with adopting the ICBM. General White made the tough, unpopular decision to prioritize the ICBM—even though it irritated the pilot-dominated establishment—because he was convinced that doing so would benefit the United States. He remem-

bered "telling the Air Staff on many occasions that the build-up in strategic missiles . . . was not good for the traditional Air Force but it was vital for the nation."[44]

Lemay, however, remained resolutely opposed to diverting money from his bombers to missiles, outlining his position in a 1955 letter: "It is my firm belief that the manned bomber must be the backbone of our offense for some time to come. . . . Various missile programs should be re-examined to eliminate as many as is necessary to provide the funds for extension of our bomber capability."[45] In June 1956, he told Congress, "We believe that in the future the situation will remain the same as it has in the past, and that is a bomber force well-equipped, determined, well-trained, will penetrate any defense system that can be devised."[46] LeMay later proclaimed, "I think any force that has manned weapons systems at its disposal will certainly have the advantage over one that chose to go to an unmanned system."[47]

White remained steadfast, lecturing the Air Staff: "Ballistic missiles are here to stay—you need to realize that and get on with it."[48] He told the Air War College that "we see too few examples of really creative, logical, far-sighted thinking in the Air Force these days. It seems to me that our people are merely trying to find new ways of saying the same old things about air power without considering whether they need changing to meet new situations and without considering the need for new approaches to new problems."[49]

In June 1957, General White convened a board of senior officers chaired by Lt Gen Donald Putt, the deputy chief of staff for development, to review and assess the prospects for integrating missiles into the service. Putt reported a "lack of Air Force interest and understanding by most top-level officers" when it came to missiles.[50] White called a "come-to-Jesus meeting" with his top generals on 30 September 1957 and scolded them for their negative attitude towards missiles: "The senior Air Force officer's dedication to the airplane is deeply ingrained, and rightly so but we must never permit this to result in a battleship attitude. We cannot afford to ignore the basic precept that all truths

change with time."[51] General White declared that the Air Force should remain flexible and ready to adopt superior technologies, noting that money limitations would not permit both the acquisition of ICBMs and indefinite funding to maintain the current inventory of manned nuclear bombers. Additionally, White warned that ever-improving Soviet antiaircraft missile capability would continue to reduce the effectiveness of the manned nuclear bomber: "With the advent of the guided missile, the US Air Force is in a critical era of its existence. It is essential that we all pull together in the effort to properly utilize this family of new weapon systems for the defense of our Nation."[52]

The general recognized the difficulty of convincing the old guard to change; thus, in April 1958, anticipating that the Atlas would shortly attain initial operational capability, he ordered the creation of a new career field for missilemen. He issued strict instructions that the new guided-missile insignia not include pilot wings of any kind.[53] Next, after seeing a disproportionate number of bomber pilots on the promotion list for brigadier general, White returned the list to LeMay, who had moved from SAC to vice-chief, with directions that the Air Staff produce a more equitable distribution.[54] General White intended to prevent a stacked deck against the fledgling weapon system.

His inspired leadership helped avert a glass ceiling for missilemen. Although excess pilots initially staffed the missiles, by 1964—four years after the first ICBM squadrons became operational—the Air Force had stood up six missile wings, ensuring operators of the new weapon system a viable path for promotion to senior ranks.[55]

Conclusion

The establishment of new promotion paths to senior ranks constitutes an important, if not indispensable, prerequisite for shepherding innovative technology and new ways of fighting. Accordingly, the Air Force should break the RPA glass ceiling by (1) creating an RPA category for Command Screening Boards, (2) eliminating the recent

manned-flight requirement for command selection, and (3) rebalancing the distribution of wing-command opportunities to break the power of vested interests.

National security demands that we break this glass ceiling. As General Schwartz observed, "Those who are able to capture and embrace technology have a significant advantage over those who have not."[56] If the Air Force fails to lead the future of remotely piloted airpower, then the other services and/or our adversaries will assume that responsibility.[57] ✪

Notes

1. Stephen Peter Rosen, *Winning the Next War: Innovation and the Modern Military* (Ithaca, NY: Cornell University Press, 1991), 105.
2. Pilots who transition to the RPA from manned aircraft receive an Air Force Specialty Code of 11U.
3. Secretary of Defense Robert M. Gates, to Gen Norton Schwartz, memorandum, subject: Continued Growth of Unmanned Aircraft Systems, 29 June 2011.
4. "Lawmakers Ask Review of Unmanned Promotion Rate," *Air Force Times*, 3 October 2012, http://www.airforcetimes.com/news/2012/10/air-force-ask-gao-review-uav-pilots-promotion-rate-100312/.
5. Ibid.
6. Houston Cantwell, "RADM Thomas J. Cassidy's MQ-1 Predator: The USAF's First UAV Success Story" (thesis, Air Command and Staff College, Maxwell AFB, AL, April 2006), 25.
7. Michael Hoffman, "Hundreds of Reaper, Predator Pilots Needed," *Air Force Times*, 29 September 2008, http://www.airforcetimes.com/news/2008/09/airforce_uav_pilots_092908w/.
8. Although the Air Force now allows permanent changes of station for RPA personnel, the selection rate for professional military education remains low. Indeed, the MQ-1/9 community has the lowest selection rate for both intermediate and senior developmental education among all major weapon systems (MQ-1/9: 4 percent, F-16: 12 percent, F-15: 17 percent). Air Combat Command to Headquarters Air Force, PowerPoint presentation, subject: Reconstitution Assessment, 1 December 2012, slide 1.
9. *National Defense Authorization Act for Fiscal Year 2013: Conference Report to Accompany H.R. 4310*, 112th Cong., 2nd sess., 18 December 2012, 94–95, http://www.airforce-magazine.com/SiteCollectionDocuments/Reports/2013/January%202013/Day04/HR4310_Conference_Report.pdf.

10. Mark A. Welsh III, "The World's Greatest Air Force: Powered by Airmen, Fueled by Innovation; A Vision for the United States Air Force," 10 January 2013, http://www.af.mil/shared/media/document/AFD-130110-114.pdf.

11. Thomas P. Ehrhard, "Unmanned Aerial Vehicles in the United States Armed Services: A Comparative Study of Weapon System Innovation" (Phd diss., Johns Hopkins University, June 2000), 492.

12. "Biographies," US Air Force, accessed 26 March 2013, http://www.af.mil/information/bios.

13. ACC is the core function lead integrator (CFLI) for air superiority; global precision attack; global integrated intelligence, surveillance, and reconnaissance; personnel recovery; and command and control.

14. Lawrence Spinetta, "The Rise of Unmanned Aircraft," *Aviation History*, 10 November 2010, http://www.historynet.com/the-rise-of-unmanned-aircraft.htm.

15. Squadrons with single-seat fighters typically have 30–40 assigned pilots. In contrast, the smallest squadron at Creech AFB has more than 100 personnel.

16. The Air Force plans to transfer F-22s at Holloman to Tyndall AFB, FL, the product of Secretary Gates's decision in 2009 to discontinue Raptor procurement and consolidate F-22s. "Holloman AFB to Lose 250 Jobs When F-22 Leaves," Associated Press, 28 September 2012. Scheduled to occur in 2012, the F-22 transfer was subsequently delayed to 2014 to coincide with the transfer of F-16s from Luke AFB, AZ, to Holloman. Brian Everstine, "Holloman F-22 Squadron Staying Put till 2014," *Air Force Times*, 10 January 2013, http://www.airforcetimes.com/news/2013/01/air-force-f22-tyndall-011013w. Note that the Air Force dropped the word *fighter* from the Holloman wing's official designation on 25 June 2010, concurrent with the change of command ceremony for Col David Krumm, an F-15 pilot turned Raptor pilot. Colonel Krumm was replaced by another fighter pilot in June 2012.

17. Only one of the four aforementioned wing commanders—the Ellsworth commander—lists RPA-familiarization flight time in his biography.

18. Again, ACC—not the National Guard—serves as the CFLI for combat aircraft.

19. Although no one other than a fighter pilot has ever commanded the 432nd Wing, everyone considers it an RPA wing.

20. Fighter-pilot wing commands include the following: (1) 1st Fighter Wing, Joint Base Langley-Eustis, VA; (2) 4th Fighter Wing, Seymour Johnson AFB, NC; (3) 20th Fighter Wing, Shaw AFB, SC; (4) 49th Wing, Holloman AFB, NM; (5) 355th Fighter Wing, Davis-Monthan AFB, AZ; (6) 366th Fighter Wing, Mountain Home AFB, ID; (7) 388th Fighter Wing, Hill AFB, UT; (8) 33rd Fighter Wing, Eglin AFB, FL; (9) 56th Fighter Wing, Luke AFB, TX; (10) 325th Fighter Wing, Tyndall AFB, FL; (11) 31st Fighter Wing, Aviano AB, Italy; (12) 39th Air Base Wing, Incirlik AB, Turkey; (13) 52nd Fighter Wing, Spangdahlem AB, Germany; (14) 46th Test Wing, Eglin AFB, FL; (15) 412th Test Wing, Edwards AFB, CA; (16) 8th Fighter Wing, Kunsan AB, South Korea; (17) 15th Wing, Joint Base Pearl Harbor, Hickam, HI; (18) 35th Fighter Wing, Misawa AB, Japan; (19) 36th Wing, Andersen AFB, Guam; (20) 51st Fighter Wing, Osan AB, South Korea; (21) 354th Fighter Wing, Eielson AFB, AK; (22) 57th Wing, Nellis AFB, NV ("Home of the Fighter Pilot"); (23) 53rd Wing, Eglin AFB, FL; (24) 3rd Wing, Joint Base Elmendorf-Richardson, AK; (25) 48th Fighter Wing, RAF Lakenheath, United Kingdom; and (26) 18th Wing, Kadena AB, Japan. The number of wing-command opportunities for fighter pilots increases if one includes pilot-training wings.

21. US Air Force, Office of the Deputy for Cost and Economics, *United States Air Force Statistical Digest: Fiscal Year 2010* (Washington, DC: US Air Force, Office of the Deputy for Cost and Economics, 2010), 93, table E-4.

22. Maj Wm. Bruce Danskine, "Fall of the Fighter Generals: The Future of USAF Leadership" (thesis, School of Advanced Air and Space Studies, Maxwell AFB, AL, June 2001), viii, http://dtlweb.au.af.mil///exlibris/dtl/d3_1/apache_media/L2V4bGlicmlzL2R0bC9kM18xL2FwYWNoZV9tZWRpYS80OTQ0OA==.pdf.

23. The current vice-chief, Gen Larry Spencer, is nonrated. Including Spencer, four of the 37 vice-chiefs since the Air Force's birth in 1947 have been nonaviators.

24. Headquarters Air Force, memorandum, subject: 2012 CSB Eligibility Criteria, 15 July 2012.

25. The Air Force Colonel Management Office (AFCMO) confirmed that it has no plans to create an RPA command category for future boards. Moreover, the policy that mandates recency of fighter flight time is not under review and will remain in place. Ryan Richardson, AFCMO, Washington, DC, discussion with the author, 30 November 2012.

26. Gen Charles Gabriel, appointed in 1982, was the first fighter pilot who served as chief of staff in the long succession noted earlier.

27. Lt Col Lawrence Spinetta and M. L. Cummings, "Unloved Aerial Vehicles," *Armed Forces Journal* 150, no. 4 (12 November 2012): 32.

28. This practice continued for decades before ending in 2006. See Adam J. Hebert, "Eighty-Six Combat Wings," *Air Force Magazine* 88, no. 12 (December 2006): 25–29, http://www.airforce-magazine.com/MagazineArchive/Documents/2006/December%202006/1206wings.pdf.

29. Air Combat Command, *2012 Air Combat Command Strategic Plan: Securing the High Ground* (Joint Base Langley-Eustis, VA: Air Combat Command, 2012), 6, http://www.acc.af.mil/shared/media/document/AFD-120319-025.pdf. The Air Force has consistently taken the position that RPAs are not substitutes for manned fighters. Government Accountability Office, *Tactical Aircraft: DOD's Ability to Meet Future Requirements Is Uncertain, with Key Analyses Needed to Inform Upcoming Investment Decisions* (Washington, DC: Government Accountability Office, July 2010), 8, http://www.gao.gov/assets/310/308236.pdf.

30. Even the Air Force's accounting system betrays its predisposition towards manned aircraft. The service's budget documents classify manned fighters and bombers as "combat aircraft" but groups RPAs under a miscellaneous category called "other aircraft." Department of the Air Force, *United States Air Force FY 2011 Budget Estimates*, vol. 1, *Aircraft Procurement, Air Force* (Washington, DC: Department of the Air Force, February 2010), http://www.saffm.hq.af.mil/shared/media/document/AFD-100128-072.pdf.

31. Spinetta and Cummings, "Unloved Aerial Vehicles," 9. Note that manned aircraft receive 92 percent of the Pentagon's aircraft procurement money. Spencer Ackerman and Noah Shactman, "Almost 1 in 3 U.S. Warplanes Is a Robot," *Wired*, 9 January 2012, http://www.wired.com/dangerroom/2012/01/drone-report.

32. Congress intervened and suspended the Air Force's request to retire the Block 30 Global Hawk fleet until 2014. *National Defense Authorization Act for Fiscal Year 2013*.

33. Headquarters US Air Force, *United States Air Force Unmanned Aircraft Systems Flight Plan, 2009–2047* (Washington, DC: Headquarters US Air Force, 18 May 2009), http://www.fas.org/irp/program/collect/uas_2009.pdf.

34. House, *Department of the Air Force, Presentation to the House Appropriations Subcommittee on Defense, Fiscal Year 2014 Air Force Posture Statement, Statement of the Honorable Michael B. Donley, Secretary of the Air Force, and General Mark A. Welsh III, Chief of Staff, United States Air Force*, 113th Cong., 1st sess., 9 May 2013, 21, http://appropriations.house.gov/uploadedfiles/hhrg-113-ap02-wstate-donleym-20130509.pdf.

35. "US Air Force May Reconsider Reaper/Predator Combat Air Patrol Levels," UAS Vision, 26 November 2012, http://www.uasvision.com/2012/11/26/us-air-force-may-reconsider-reaperpredator-combat-air-patrol-levels.

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40. Neil Sheehan, *A Fiery Peace in a Cold War: Bernard Schriever and the Ultimate Weapon* (New York: Random House, 2009), 132.

41. Quoted in Matthew Brzezinski, *Red Moon Rising: Sputnik and the Hidden Rivalries That Ignited the Space Age* (New York: Henry Holt and Company, 2007), 81.

42. Much of this section is based on Lawrence J. Spinetta, "White vs. LeMay: The Battle over Ballistic Missiles," *Air Force Magazine* 96, no. 1 (January 2013): 56–60, http://www.airforce-magazine.com/MagazineArchive/Documents/2013/January%202013/0113LeMay.pdf.

43. Jacob Neufeld, *The Development of Ballistic Missiles in the United States Air Force, 1945–1960* (Washington, DC: Office of Air Force History, 1990), 121.

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53. George Mindling and Robert Bolton, *U.S. Air Force Tactical Missiles, 1949–1969: The Pioneers* (Raleigh, NC: Lulu, 2008), 131. The criteria for awarding the guided missile insignia were published on 23 May 1958 in Air Force Regulation 35-5, *Guided Missile Insignia*.

54. Worden, *Rise of the Fighter Generals*, 81.

55. Comptroller of the Air Force, *Statistical Digest*, 20, table 2.

56. Schwartz, speech.

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