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TEN THOUSAND FEET AND TEN THOUSAND MILES

Congratulations to Maj Dave Blair (“Ten Thousand Feet and Ten Thousand Miles: Reconciling Our Air Force Culture to Remotely Piloted Aircraft and the New Nature of Aerial Combat,” May–June 2012) for his audacity in bringing this topic into the limelight. Truthfully, a veritable need exists for a healthy servicewide discussion regarding the role *and recognition* of remotely piloted aircraft (RPA) or any aircraft without an onboard operator. In my assessment, a noticeable but gradual cultural metamorphosis toward RPA acceptance is occurring within the rank and file. Now, the disquieting question concerns whether the establishment will fully embrace this “wave of the future” community or simply keep it suspiciously at arm’s length.

Although well intentioned, I believe that Blair’s thesis loses its footing and, in effect, misses the mark. That said, his article is essentially an opening argument—a starting point—for the larger debate. Major Blair’s overall assertion is that since RPA crews assume the same legal responsibilities, military authorities, and “combat risk” as their manned counterparts, they should be entitled to identical accolades afforded the crews of manned platforms. Although the Air Force acknowledges the contribution of the RPA community, the service continues to show deference—at its own injury—toward the legacy of manned flight, particularly in terms of recognizing individuals by awarding them decorations.

This argument revisits the age-old tug-of-war between the Army and Air Force regarding priorities and doctrine. Ironically, the ground commander, time and time again, has vocally lavished RPA crews with commendation. If the Air Force decides to repeatedly discount the RPA mission, then it risks the underlying peril of steadily abdicating remotely piloted aircraft to another, more interested, military branch—chiefly the US Army. The latter has made great strides in building a capable RPA fleet and has demonstrated the desire to further increase

its command and control of remotely piloted airborne intelligence, surveillance, and reconnaissance.

Unresponsiveness to the increasing demand for intelligence, surveillance, and reconnaissance has not served the Air Force well, especially in the estimation of civilian oversight. When Secretary of Defense Robert M. Gates publicly chided air leaders in April 2008, his unsettling remark served as a lucid warning: “My concern is that our services are still not moving aggressively in wartime to provide resources needed now on the battlefield. I’ve been wrestling for months to get more intelligence, surveillance, and reconnaissance assets into the theater. Because people were stuck in old ways of doing business, it’s been like pulling teeth” (*Air Force Times*, 21 April 2008). It may have been coincidental that Secretary Gates’s rebuke coincided with the resignation of Gen T. Michael Moseley, the Air Force chief of staff, but the acceleration of RPA capability within the area of responsibility was not happenstance.

In defense of Major Blair, Predator crews do have combat responsibility because of their lawful obligations—the same as any armed combatant. Furthermore, the lethal manifestations of combat—whether by dagger, artillery round, Hellfire missile, or space-based laser—have the same physical outcome if properly employed: to rain death and destruction upon the enemy. Whether kinetic or nonkinetic, weapons employment is an identifiable threshold for combat. Technology eliminates the need to witness the effect firsthand. Additionally, the Air Force has struggled to apply a consistent definition of “combat.” Institutional contradiction was never more obvious than in the aftermath of 11 September 2001 when combat hours were awarded to fighter crews flying within US airspace under the guise of Operation Noble Eagle. Still, Blair mistakenly implies that effectiveness equates to risk. This is not the case.

The intelligence community utilizes an equation to represent the threat from an adversary: $\text{threat} = \text{intent} + \text{capability}$. That same qualitative principle, correspondingly, serves to better define the situationally dependent aggregate risk (cumulative risk) encountered by

any friendly combatant. Thus, combat risk = enemy intent + enemy capability. Under this premise, real differences exist between the risk encountered at 10,000 feet and 10,000 miles—significant differential dangers that we as professionals readily recognize.

To offer that RPA operators encounter the same aggregate risks as combatants physically present in a hostile land is an oversimplification. Moreover, it completely disregards the physical and layered defenses beginning at American borders and ports of entry, and thereby marginalizes the Department of Homeland Security, the Department of Justice, state and local law enforcement, and even the US Coast Guard, which often falls under the authority of *United States Code*, title 10. More importantly, it fails to recognize that more civilians than uniformed members have died on US soil from terrorism. Based on history and terrorism's countervalue strategy, I would argue that it's much riskier to be a flight attendant on a commercial airline than a military member waiting in line at the installation gate.

Because of the permissive operational environment in Afghanistan, Iraq, Horn of Africa, and even Libya, RPAs have enjoyed heavy utilization. This trend will continue for similar environments in the future. However, in intense combat environments where the electromagnetic spectrum is compromised and not dominated by the United States or its allies, the utilization of remotely piloted assets could be extremely limited. In such peer-level conflicts with China or Russia, manned assets could potentially be the only useful platforms until the electromagnetic spectrum and air dominance are finally established. Sending the manned fighter or bomber the way of the dinosaur would prove imprudent. As has been our mantra for as long as I can remember, flexibility—in this case, piloted *and* remotely piloted—is the key to airpower.

The most important principle regarding awards and decorations involves realizing that these items are a vehicle to recognize subordinates as determined by the chain of command. Simply, this is a commander's decision and no one else's. Counter to the sentiment of Major Blair's article, RPA crews have not been entirely ignored for their work in the

combat zone. On the contrary, RPA operators—pilots and sensor specialists—have experienced a windfall of decorations. It is a fact that RPA crews were prohibited after the initial days of Operation Iraqi Freedom from receiving the Distinguished Flying Cross or the Air Medal in accordance with US Central Command's decorations guide (more than likely at the behest of traditional aircrew advocates). However, in my observation, combat-mission-ready RPA operators can qualify for an Aerial Achievement Medal based upon cumulative sortie count, typically every 60 calendar days, even after squadron-induced limitations. Only three years ago I served as the awards-and-decorations officer in the same squadron as the author, and I distinctly remember completing a 27th-oak-leaf-cluster decorations package for a particular veteran MQ-1 sensor operator. Undoubtedly, many readers just gasped at this anecdote, but in a grossly neglected community that has received only a modicum of recognition, our leaders resorted to the only avenue available to them. In many ways, it was their attempt to send a clear message to their superiors and naysayers: we are fighting this war from the air too.

Nevertheless, RPA squadrons that are considered “deployed in garrison” do not receive recognition for campaign contributions like their expeditionary equivalents. The advantage of technology is that it compresses time and space and allows for “reachback.” Despite their direct impact and effect within the area of responsibility, RPA operators are denied campaign decorations such as the Iraq and Afghanistan Campaign Medals. The criteria for these medals mandate a physical presence within the geographic theater of operations. Unfortunately, this fails to recognize the effects-based paradigm shift that technology brings. This is the crux of Blair's argument, and it would behoove the Air Force to equitably move RPA crews into the decorations scheme.

Still, the dispute here is not about “chest candy” or medals. Instead, the comparison between major weapon systems should be based upon standardized metrics or uniform measures of effectiveness. In this manner, the Air Force can truly comprehend the level of effort and contribution that the RPA community is committing to the fight. Fur-



ther consideration will need to be involved in servicewide-accepted metrics, but they could include basic measurements such as flight hours, mission rates, and/or enemies killed in action. To Blair's point, this would remove the bias of relative performance and set a foundation for RPA community credentials.

My military professor, Lt Col Kristina Young, retired, observed that "all warfare is asymmetrical." In other words, the intent of warfare is to maximize one's comparative advantage. Americans are particularly adept at this concept. If we really wanted a fair fight for the sake of heroics, as the F-22 pilot asserted in Blair's article, then we would limit our footprint in Afghanistan to a small ground contingent armed with AK-47s. Fortunately, a "fair fight" requirement is not in our doctrine. The asymmetry with RPAs is the capability to exact certain effects at much lower levels of aggregate risk.

The truth is that the Air Force must get on board the RPA transformation from the top down. It represents the incipient stage in a complete paradigm shift to a more automated battlefield. In time, remotely piloted technology, including cyber and space, will envelop the other physical domains. The Air Force is obligated to lead the way. It is our legacy.

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TEN THOUSAND FEET AND TEN THOUSAND MILES: THE AUTHOR REPLIES

Maj Christian Senn's incisive critique effectively engages the arguments raised in my recent article, and I truly appreciate his analytical rigor and professionalism in moving this discussion forward. I believe that Major Senn and I, by and large, agree on the fundamentals and differ primarily on stylistics. As he astutely observes, the article is intended as an entry point into a larger debate over the trajectory of the RPA culture. Toward advancing that debate, I am grateful for the chance to clarify three points: the contrast between combat responsibility and individual

combat risk, the difference between absolute and marginal risk, and the distinction between objective and relative valuation in recognition.

First, the central point I intended to advance is that combat for an aviator is best described in term of *in situ* collective risk and weapons employment, or “combat responsibility,” rather than an atomistic view of individual risk to the aviator. As with officers in our sister services, we are measured by our duties to our comrades and the weight of life-and-death decisions. The idea that I am asserting that RPA crews face the same individual combat risk as manned aviators is mistaken; rather, I argue that individual combat risk is a problematic and incomplete definition for combat. Combat responsibility, which includes individual and corporate risk as well as weapons employment, better captures the nature of contemporary aerial combat.

Lt Col Dave Grossman, author of *On Killing* and *On Combat*, describes a slew of mental and physiological reactions to the weight of these situations.¹ For aviators in a day of beyond-visual-range sensors and weapons, these responses are filtered through a technological lens. Past the threshold of visual range, it is not physical distance but cognitive distance—a function of sensor resolution and dwell time—that forces an aviator to deal with the reality of taking lives. This is true for manned and remotely piloted aircraft alike.

Second, manned aviators are under more absolute risk in all circumstances than remote aviators; the argument I raised compares marginal risk due to combat rather than absolute risk. Major Senn’s impression that I held that “RPA operators encounter the same aggregate risks” as manned aviators is due to a misunderstanding of the term *differential risk*. His use of the term *aggregate* implies that I was comparing the absolute risk of manned and remote aviators, whereas in actuality I was comparing the conditional increase of risk due to combat duties. However, given the number of sharp and thoughtful individuals that joined him in that misimpression, I must conclude that this is a result of my own failure to communicate, and for that the blame belongs to me alone.

“Differential combat risk” is the marginal effect of combat, the increase in risk from the baseline of noncombat operations due to combat-specific factors. Hypothetically, if a manned pilot has a peacetime risk of 0.1 percent compared to a remote pilot’s 0.0 percent risk and has a risk of 0.11 percent in the course of combat duties compared to a remote pilot’s 0.01 percent risk, then the manned pilot’s “absolute risk” is higher in both circumstances, but his differential combat risk is an equivalent 0.01 percent. This does not diminish the bravery it takes to “slip the surly bonds of Earth” nor the tragedy of losing friends when the baseline risks of flight manifest themselves. Still, normal flying risks do not constitute combat; hence, only this marginal increase can constitute individual combat risk.²

This clarification notwithstanding, Major Senn misapplies the principle of conditional risk and improperly uses Bayesian statistical reasoning in his analysis. He offers a plausible circumstance as an example of manned aircraft risk due to enemy fire, as I did in my article. He then equates a similarly plausible circumstance of a targeted terror attack to a dismissal of the Department of Homeland Security, a non sequitur that seems discordant in light of the recent Fort Hood attacks. The risk to civilians that he discusses, while plausible, is also irrelevant; if anything, this comparison illustrates my point that individual combat risk is an unsatisfactory metric. The scenario of high-altitude-capable enemy fire in post-air-defense Afghanistan relies as much on hypotheticals as a scenario of a targeted terror attack on RPA operators; neither is suitable for a robust comparison.³

In formal terms, assessments of manned and remote differential combat risk are based on weak prior probabilities and are therefore not meaningfully different. (I would make two exceptions to this assertion: fixed-wing gunships, due to extended loiter, and rotary-wing aviation, due to low altitude. However, using these caveats to represent modal manned differential combat risk would be a category mistake and a fallacy of composition.) The heroism of Air Force combat rescue has prevented airborne maintenance issues from becoming survival, evasion,

resistance, and escape (SERE) situations, just as the heroism of Air Force Security Forces and the Office of Special Investigations has prevented targeted terror attacks from manifesting. Thankfully, comparisons of individual combat risk are questions about “what could happen” rather than “what has happened.” On the other hand, the data are amply clear that allied ground troops are unquestionably at risk, and it is this strong risk that should drive our analyses. Combat responsibility accounts for their risks, but individual combat risk does not. Like the P-51 “little friends” that protected bombers in World War Two and the F-15E crews that defended Combat Outpost Keating in Afghanistan, the first concern of Airmen should be the lives of their friends.

Usefully, Senn’s analysis highlights the dangers of cognitive biases in strategic thought. Nobel laureates Daniel Kahneman, Herbert Simon, and Amos Tversky describe how cognitive biases can affect risk perception and decision making.⁴ For instance, although the risk from an airliner transit is less than that of an automobile, the dramatic image of aviation mishaps and the regularity of traffic accidents ironically cause air transit risk to figure more prominently in many risk decisions than it statistically ought to. In a darker shade, during the early morning of 11 September 2001 (9/11), most military members would have heuristically assumed that the risk for a Soldier deployed to the Middle East was far greater than for one in the Pentagon; toward the end of the day, after we adjusted our cognitive biases, it became straightforward to see how the American military’s nerve center was a far more attractive target. In the same sense, the “unthinkability” of the Pearl Harbor attack made it a possibility—had commanders been thinking about it, they would have taken effective precautions, and it could not have happened.

As Major Senn states, “All warfare is asymmetrical,” and the art of strategy is matching strengths to an enemy’s weaknesses. These weaknesses are often hidden behind cognitive biases. In *Psychology of Intelligence Analysis*, CIA veteran Richards Heuer describes one of the most pernicious of these cognitive biases: mirror imaging or the “everyone-

thinks-like-us mind-set.”⁵ This principle allows us to adjust fire and refine Major Senn’s invocation of intelligence theory. Senn cites “enemy intent” as a determinant of threat but leaves the concept underspecified—enemy intent is driven by enemy strategy, which is driven in part by enemy perception of threat. It is then likely that enemy intent would vary from one platform to another, based on the enemy’s assessment of each platform’s effectiveness. Lt Col Liam Collins, director of West Point’s Combating Terrorism Center, describes Osama bin Laden’s perennial fear of persistent airborne surveillance.⁶ It stands to reason that his organization would focus its intent on countering these threats.

A terrorist’s acquiring an advanced missile to attack an aircraft is a risk that fits well with our cognitive biases and therefore is amplified in comparison to the expected value of a hypothesized targeted terror attack. Unfortunately, this targeted-attack hypothesis hit close to home in a recent news article describing an al-Qaeda plot against RPA operators in Texas; fortunately, the vigilance of law enforcement thwarted this attempt.⁷ Had the plot come to term, it would have seemed obvious after cognitive biases were adjusted, just as the Pearl Harbor and 9/11 attacks were clear in retrospect. That said, lest this specific risk discussion become an airpower version of the Monty Hall back-and-forth, I would note that the central argument of combat responsibility does not turn upon the result.⁸

Third, I wholeheartedly agree with Major Senn that “chest candy” is not the issue. Rather, we must consider the institutional effects of recognition—differences in relative valuation of similar actions send powerful messages throughout the service as to what is important and what is not. Decorations are cultural markers of value and visible manifestations of messages from the institution about what is laudable. The critical question is not whether a group member receives institutional recognition but whether membership in a group changes the degree of institutional recognition for equivalent actions. This is not about absolute valuation of deeds but about differences in the relative valuation of the same deeds.

Accordingly, I engage neither the important distinction between valor and achievement in awards nor the discussion over “counter medals.”

The lively debate about the proliferation of decorations is an important one, but it is not central to the implications of combat responsibility. “Equivalent actions merit equivalent recognition” is the crucial point rather than what recognition is merited for a given action. For instance, consider a scenario in which Predator crews track a critical high-value target to a safe house where he is then kinetically struck by a dynamically retasked F-16. In this case, both platforms’ crews perform their duties with excellence and professionalism. Perhaps that excellence merits decorations, or perhaps “doing your job” shouldn’t merit decoration. Either way, giving the F-16 pilot an award for heroism while excluding the Predator crews from consideration for the same sends a very clear message about what the institution believes is worth recognizing. This message ripples back into commissioning sources and flight-training pipelines, perpetuating perceptions and relative performance discrepancies through selection bias.

I hold that Major Senn’s example of the veteran sensor operator with a 27-oak-leaf-cluster Aerial Achievement Medal supports rather than undermines this principle. This is an example of conflicting institutional messages. This warrior’s frontline leaders enthusiastically recognized his continuing meritorious achievements while the higher-level institution decreed that this individual’s contributions qualified for only the lowest possible level of aerial award, regardless of effect. As Senn points out, these leaders were trying to cancel out a toxic message by max-performing the only tool they had available. Knowing this individual sensor operator personally, I believe that his airmanship and situational awareness directly saved the lives of American Soldiers and that his technical expertise guided Hellfire missiles true against our enemies. Rather than absurd amounts of low-level recognition in lieu of awards befitting his achievements, a spectrum of recognition seems far more appropriate for this warrior and the other Airmen like him. Senn’s recommendation for objective measures of combat effects, or perhaps platform-blind qualitative narratives, holds promise toward restoring sanity in this regard.



Major Senn raises a number of additional intriguing points. In short, his vision of manned and remote aircraft in a new synthesis is provident, although the nature of this synthesis should evolve from a caste structure to a true partnership. The key, however, is not only a “top down” transformation but also true pride and bottom-up respect, rooted first in a self-respect that comes only from excellence in mission execution. “Don’t accept broke” very much needs to become a creed of the still-nascent RPA community.

Finally, the crucial point of “Ten Thousand Miles” remains: we must expand our view of combat to consider our comrades, both in the air stack and the joint community. Those causally tied together through their interacting effects on the battlefield should be conceptually tied together in the idea of combat. In this, we decrease everyone’s risk by expanding our view of it beyond ourselves—ironically, by constructing combat as corporate responsibility, we reinforce the seriousness of combat duties to the RPA community, which reduces individual risk for manned aircraft operating in close proximity to RPAs. Once again, I thank Major Senn for his excellent comments and look forward to continuing the discussion of RPA culture.

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Notes

1. Dave Grossman, *On Killing: The Psychological Cost of Learning to Kill in War and Society* (Boston: Little, Brown, 1995); and Grossman with Loren W. Christensen, *On Combat: The Psychology and Physiology of Deadly Conflict in War and in Peace* ([IL]: PPCT Research Publications, 2004).

2. The idea of “normal risk” or “normal accidents” comes from Dr. Charles Perrow’s (Yale professor of sociology) research into complex systems. See his book *Normal Accidents: Living with High-Risk Technologies* (Princeton, NJ: Princeton University Press, 1999).

3. General in-theater terror attack / indirect fire risk is broadly a wash between the two platforms because both deploy detachments forward (traditional deployments for manned aircraft; launch and recovery elements for RPAs). Additionally, this analysis does not apply



in a nonpermissive environment, but the current policy does not predicate combat on robust air defenses.

4. Daniel Kahneman and Amos Tversky, "On the Psychology of Prediction," *Psychological Review* 80, no. 4 (1973): 237–51; Kahneman and Tversky, "Subjective Probability: A Judgment of Representativeness," *Cognitive Psychology* 3, no. 3 (1972): 430–54; Kahneman and Tversky, "Prospect Theory: An Analysis of Decision under Risk," *Econometrica: Journal of the Econometric Society* 47, no. 2 (1979): 263–91; Tversky and Kahneman, "Availability: A Heuristic for Judging Frequency and Probability," *Cognitive Psychology* 5, no. 2 (1973): 207–32; Tversky and Kahneman, "Judgment under Uncertainty: Heuristics and Biases," *Science* 185, no. 4157 (1974): 1124–31; and Herbert A. Simon, "Bounded Rationality and Organizational Learning," *Organization Science* 2, no. 1 (1991): 125–34.

5. Richards J. Heuer Jr, *Psychology of Intelligence Analysis* (Washington, DC: Center for the Study of Intelligence, 1999), <https://www.cia.gov/library/center-for-the-study-of-intelligence/csi-publications/books-and-monographs/psychology-of-intelligence-analysis/PsychofIntelNew.pdf>.

6. Liam Collins, "The Abbottabad Documents: Bin Laden's Security Measures," Combating Terrorism Center at West Point, 22 May 2012, <http://www.ctc.usma.edu/posts/the-abbottabad-documents-bin-ladins-security-measures>; and Jordy Yager, "Brennan: Bin Laden Left Distraught by Drone Strikes, al Qaeda Losses," *Hill*, 30 April 2012, <http://thehill.com/blogs/defcon-hill/policy-and-strategy/224569-brennan-bin-laden-feared-drones-sought-to-rebrand-al-qaeda>.

7. Dane Schiller, "Accused Terrorist Secretly Recorded Talking Jihad," *Houston Chronicle*, 9 November 2011, <http://www.chron.com/news/houston-texas/article/Accused-terrorist-secretly-recorded-talking-jihad-2261274.php#src=fb>.

8. The Monty Hall problem is described in the movie *21*: given the choice of three doors, should one change his or her guess if one of the nonchosen doors is revealed to have no prize behind it? Marilyn vos Savant offered the correct answer (yes), but the years-long discussion that followed her answer was so rancorous that she was forced to table it lest it overtake her entire column. For further reading on statistical analysis and risk assessment, I recommend Leonard Mlodinow, *The Drunkard's Walk: How Randomness Rules Our Lives* (New York: Random House Digital, 2009); D. J. Hand, *Statistics: A Very Short Introduction* (Oxford, UK: Oxford University Press, 2008); and Baruch Fischhoff and John Kadvanly, *Risk: A Very Short Introduction* (Oxford, UK: Oxford University Press, 2011).

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