

# US Military Innovation

## Fostering Creativity in a Culture of Compliance

Col John F. Price Jr., USAF

### Innovative Spark

Almost 2,400 years ago, Plato wrote, “Yet a true creator is necessity, which is the mother of our invention.”<sup>1</sup> These words have resonated through the centuries and have transformed to a maxim describing how challenging conditions are often needed to spark innovation, especially in environments reluctant to change. As the wars of this century begin to fade, the US military faces a daunting fiscal environment, personnel drawdowns, and continually altering threats that create ideal conditions for new ideas and change. To capitalize on this opportunity, senior leaders must promote a clear understanding of innovation and work to shape the military’s culture of compliance into one of disciplined creativity.

### Understanding Innovation

The landscape of American military dialogue on innovation has become cluttered over the last two decades with sensationalized language of transformation and revolutions. Somewhere along the way, our infatuation with technological change led us to view innovation as a point instead of a process—a dangerous error because it creates an unrealistic expectation for future innovation. As Michael Siegl points out, “innovation is a complex process that is neither linear nor always apparent. The interactions among intellectual, institutional,

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and political-economic forces are intricate and obscure. The historical and strategic context within which militaries transform compounds this complexity.”<sup>2</sup> Innovation in the military, as in other sectors, seems an isolated event only when we intentionally separate the culminating breakthrough from the sequence of preceding events. If we view history with this restricted view, then Edison’s light bulb and the Wright brothers’ aircraft appear as dynamic manifestations of inspiration. Conversely, if we view these innovations as products in their full context, then we begin to see innovation as the consequence of creativity and effort applied over time.

In the course of the American military experience, the dialogue on innovation has slowly transitioned from the assumption of individual genius as its primary source to technological breakthrough and adaptive tactical application as recognized drivers. However, the increased emphasis on technology undermines the important role of individual advocacy and organizational culture in the innovative process. In his article “Understanding Innovation,” Col Thomas Williams argues that “true innovation is not a discrete event or individual action, but a process. As a process, it demands that leaders understand multiple complex systems. Innovation thus includes building consensus and preventing interference or sabotage from risk-averse or hostile players. It also requires an understanding of differing frames of reference, intricate structures, and diverse control and boundary systems.”<sup>3</sup> Sometimes this understanding is connected with preexisting conditions rather than revelations associated with new breakthroughs. It seems that “the people who appear as great innovative thinkers are often only pointing out what has become true, but not yet commonly known and accepted.”<sup>4</sup> The lesson for military leaders is that the next great breakthrough does not have to come from their organization, their service, or even the military. Since truly new ideas are rare, it is likely that the next innovation is already here and just awaiting recognition.

## Embracing Innovation

This concept of receptivity to innovation is another recurring theme in US military history. Whether contemplating the transition to maneuver warfare or the gradual acceptance of aircraft as something beyond observation platforms aloft, the military establishment has consistently demonstrated a reluctance to embrace innovative methods. Although the aspects of individual and organizational resistance to change have been well documented, the hierarchical nature of the military makes it especially reluctant to embrace major shifts. As Gary Hamel notes, “the worshipful observance of precedent is a very good thing for those who sit at the top of organizations, because precedent protects their prerogatives. It rewards the skills they’ve perfected and the knowledge they’ve acquired in running the old thing. But precedent . . . is a very bad thing for anyone who wants to create a new future.”<sup>5</sup> To combat this dynamic, senior leaders must openly embrace creativity and informed risk taking. Gen Mark Welsh, the Air Force chief of staff, gladly accepts these concepts by including the phrase “Powered by Airmen, Fueled by Innovation” in the service’s new vision statement and thus takes the right first step in shaping the culture.<sup>6</sup>

During periods of open conflict, the military establishment has demonstrated increased receptivity to technological innovations—witness the stealth aircraft and bunker-busting munitions in Operation Desert Storm or remotely piloted aircraft in Afghanistan and Iraq. Clearly, political-military circumstances affect our receptivity to risk and, hence, innovation. According to Michael Horowitz, nations respond differently to potential innovations because of what he terms adoption-capacity theory: “The combination of financial intensity and organizational capital possessed by a state, influences the way states respond to major military innovations and how those responses affect the international security environment.”<sup>7</sup> Establishing the right approach to innovation entails more than simply posturing to become the source of the next breakthrough. Developing a culture of creativity signals intent to

friends and adversaries that the organization intends to remain postured and relevant, even in the face of fiscal or political changes.

It is important to note from the theory that tactical or technological developments do not ensure success by the innovator. Instead, as Michael Mosser observes in his analysis of Horowitz, “innovations often benefit precisely those states who were not involved in the innovations themselves, but who were able to better implement them into their own cultures and bureaucracies.”<sup>8</sup> This is a great reminder for military leaders to encourage their members to seek innovations from all sources—military or civilian, ally or adversary.

## Innovative Risk and Reward

This theory poses an interesting quandary for American military leaders. Not only do they need to push the envelopes of tactical and technological development but also they must ensure the applicability and receptivity of those developments; otherwise, they could miss opportunities and become unintentionally innovating for others. Yet, at the same time, they are reluctant because of the cost and risk involved in pursuing innovation. As Terry Terriff points out, “military organizations thus have been and continue to be in the problematic position of needing to innovate new military concepts and technologies in order to sustain or regain their effectiveness, all the while recognizing that innovations adopted today may be less effective or even inappropriate tomorrow.”<sup>9</sup> The looming period of fiscal austerity threatens to make the military even more reluctant at the very time it most needs creativity and innovation.

To combat this tendency, military leaders must focus on fostering a culture of creativity and intelligent risk taking. Siegl writes that “military culture is the linchpin that helps determine the ability to transform because it influences how innovation and change are dealt with.” The development of receptive culture is essential because “transformation and innovation are the results of a continuous, deliberate process

of learning and adapting.”<sup>10</sup> Additionally, from an external standpoint, Mosser argues that “a state must have the *capacity* to recognize, utilize, and inculcate within the ranks of its military and policy community innovations that arise in the international arena” (emphasis in original).<sup>11</sup> Therefore, it should be clear that the development and sustainment of an innovative culture in the US military requires sustained, deliberate effort by senior leadership.

## A Note of Caution

In many debates over the correct approach to innovation in the US military, the bureaucracy ends up bearing the brunt of the critique from those who advocate greater creativity. Often blamed for stifling the creative potential of military members, the bureaucratic system actually provides the control and structure needed to enable innovation. The promise of future innovation must be balanced with the organization's need for stability and continuity. Innovation is a worthy goal, but we must keep its pursuit in perspective. According to Prof. Robert Quinn, “We tend to treat innovation with reverence. We have romanticized it, and we are always chasing after it, as if it is some holy grail.” Although this notion may seem counterintuitive, given all of the rampant advocacy for innovation, Quinn argues that a clear, negative side exists to having too much of a push for change: “Innovators, for example, can be creative, but if they push their inclinations too far, their behavior leads to belligerence, chaos, disastrous experimentation, and unprincipled opportunism.”<sup>12</sup> Depending upon the circumstances, this excess can offer the aggressive spark needed to trigger a full transformation, or it can become a time-consuming distraction. Interestingly, this can be a matter of perspective, as seen in the life of Brig Gen William “Billy” Mitchell. His actions during the interwar years pushed the envelope of military aviation by demonstrating the ability to attack naval vessels from the air, but superiors deemed his advocacy sufficiently radical to warrant his court-martial. Senior leaders, therefore, must ask

how the innovative genius of mavericks like Mitchell would be received in today's military.

## Charting a Future Path

At the end of his thought-provoking text *Mastering the Dynamics of Innovation*, James Utterback offers these sobering words to organizational leaders:

In a stable and effective but conservative organizational environment the reward for improving existing technology, products and processes is greater than the incentive to turn the world on its head. Thus ground breaking changes are viewed as difficult, disruptive, unpredictable, and risky, while incremental innovations are seen as reliably producing predictable results more quickly. It is a great irony that wisdom for many firms that derive current good fortune from radical innovations of the past lies in erecting barriers to these same types of innovations today.<sup>13</sup>

The future of the US military and, consequently, the US position in the international system hinges on how current leaders approach innovation over the next several years. If they work to sustain the innovative spark by fostering a culture of responsible risk taking, then the United States will probably ride the waves of innovation and sustain its prominent position on the global stage. Conversely, if fiscal and political pressures drive the emphasis to stability, compliance, and continuity, the spark of innovation likely will be limited to incremental changes or extinguished altogether. Acknowledging the risks, we must move forward with confidence that the creativity and drive inherent in our military and corporate partners are sufficient to warrant the risks and that aggressive innovation is the only truly sustainable path ahead. ✪

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### Notes

1. Plato, *The Republic*, Vintage Classics ed., trans. Benjamin Jowett (New York: Vintage Books, 1991), book 2, 369c.
2. Michael B. Siegl, "Military Culture and Transformation," *Joint Force Quarterly* 49 (2nd Quarter 2008): 103.

3. Col Thomas M. Williams, "Understanding Innovation," *Military Review* 89, no. 4 (July–August 2009): 60.
4. *Ibid.*, 61.
5. Gary Hamel, *Leading the Revolution* (Boston: Harvard Business Press, 2000), 153.
6. Headquarters US Air Force, *The World's Greatest Air Force, Powered by Airmen, Fueled by Innovation: A Vision for the United States Air Force* (Washington, DC: Headquarters US Air Force, 10 January 2013), <http://www.osi.af.mil/shared/media/document/AFD-130111-016.pdf>.
7. Michael C. Horowitz, *The Diffusion of Military Power: Causes and Consequences for International Politics* (Princeton, NJ: Princeton University Press, 2010), 209.
8. Michael W. Mosser, "Can't Buy Me Progress: The Paradox of Military Innovation," *International Studies Review* 13, no. 3 (September 2011): 549.
9. Terry Terriff, "Warriors and Innovators: Military Change and Organizational Culture in the US Marine Corps," *Defence Studies* 6, no. 2 (July 2006): 215.
10. Siegl, "Military Culture and Transformation," 103, 105.
11. Mosser, "Can't Buy Me Progress," 549.
12. Robert E. Quinn et al., *Becoming a Master Manager: A Competency Framework*, 2nd ed. (New York: John Wiley and Sons, 1996), 62, 61.
13. James M. Utterback, *Mastering the Dynamics of Innovation* (Boston: Harvard Business School Press, 1996), 244.



### **Col John F. Price Jr., USAF**

Colonel Price (USAFA; MS, National Defense University; MA, George Washington University; MA, DSL, Regent University) serves as the wing commander for the 305th Air Mobility Wing at Joint Base McGuire-Dix-Lakehurst, New Jersey. Previously, he served as the vice wing commander at Scott AFB, Illinois; on the Joint Staff at the Pentagon; as a C-17 squadron commander; and as a strategic planner at Headquarters US Pacific Command. A graduate of Squadron Officer School, Air Command and Staff College, Joint Advanced Warfighting School, and Air War College, Colonel Price was also an Air Force Fellow for senior developmental education.

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