



Exploring the Future Operating Environment

By Jeffrey J. Becker and John E. DeFoor

The first, the supreme, the most far-reaching act of judgment that the statesman and commander have to make is to establish . . . the kind of war on which they are embarking.

—CARL VON CLAUSEWITZ, *ON WAR*

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As we move past the plan of the day, proceed outside of the budget cycle, and venture beyond the 10-year horizon of strategic planning efforts, significant ongoing changes in the security environment

will alter the character of warfare beyond recognition. Competent, competitive states will combine military and societal power to coerce others, including the United States. Corrosive economic, social, and environmental



Sailors handle line aboard USS *Green Bay*, part of Bonhomme Richard Amphibious Ready Group, along with Embarked 31st Marine Expeditionary Unit, underway in U.S. 7th Fleet area of operations, Okinawa, Japan, April 8, 2015 (U.S. Navy/Scott Barnes)

forces will foment widespread, violent disorder. Rapidly evolving technologies will upend socioeconomic structures and threaten current joint force advantages. Understanding how these forces might reshape warfare does not come naturally or easily. Colin Gray, reflecting on this difficulty, observed that the outbreak of war often resembles a “race between belligerents to correct the consequences of the mistaken beliefs with which they entered combat.”¹

Why We Look Forward

In the past, describing the future security environment as “complex” was good enough. Until recently, hard military choices could be deferred. Truly existential threats were few. We no longer enjoy that luxury. Balanced against the indecision inherent in complexity, we see history as replete with audacious—yet ultimately erroneous—predictions about how the future would unfold.² Neither

of these errors—errors of indecision and false confidence—excuses military professionals from considering and confronting change in the character of warfare. Thinking about the future lays the groundwork for the successful adaptation of our military.

One example of a flawed view of future force requirements may be seen in the U.S. fleet immediately prior to World War II. A “mistaken belief” in the 1920s and 1930s might have been a conviction that the battleship would remain the centerpiece of the fleet, with aircraft carriers operating in support of scouting and raiding missions. The attacks on Pearl Harbor and battle at Midway quickly disabused the Navy of this conviction. But in the preceding years, thoughtful, structured investigation of the use of the aircraft carrier as the fleet’s main striking arm enabled rapid adaptation and innovation. Admiral Chester Nimitz, reflecting on the Navy’s ability to adapt, stated that he “had not seen anything we had not prepared for—except the kamikaze tactics towards the end of the war; we had not visualized those.”³

What beliefs must we challenge today? New adversary stratagem and operational approaches will contest U.S. influence around the world, rupture relationships, and circumscribe our ability to protect our global interests. Will the current joint force be able to operate effectively when faced with antiaccess/area-denial capabilities, including contested logistics systems, loss of cyberspace, and a denied electromagnetic spectrum? Can we defend allies—and ourselves—against subversion by great power competition short of armed conflict, hybrid and proxy approaches, and cyber-enabled global ideological insurgencies?

There are serious implications of inaction in the face of these challenges. Although the United States will likely remain the world’s most powerful nation out to 2035, it will face threats that might overwhelm its current military capabilities. Success in direct military engagements may not result in lasting political settlements—much less peace. More urgently, inaction raises the possibility of outright military defeat of the

joint force in battle and political accommodation on an adversary's terms rather than our own. These projected challenges demand continuous examination of the joint force's ability to secure the Nation today and tomorrow.

Doing Military Futures Right

For the joint force, there is a right way and a decidedly wrong way to think about the future of conflict and war. First and foremost, military futuring is not about identifying specific conflicts or the trajectory of strategic relations with specific competitors and adversaries. Nor should it seek to identify the location or proximate causes of the next war.

To be useful, military futures should focus on those factors and circumstances that will most directly affect the decisions and actions of future joint commanders. It should consider those international, human, and technological factors that will drive conflict. It should develop a set of competitive spaces that will alter the character of conflict. It should cultivate the intellectual agility and mental resilience that will allow members of the joint force to have—much as Admiral Nimitz intimated—a sense of *déjà vu* in the midst of crisis. It is about understanding the missions the future joint force will be asked to conduct and about ensuring the joint force has the tools and operational approaches it needs to win. Doing military futures in the right ways will allow us to prepare the joint force, as a whole, to be ready—both materially and mentally—when the inevitable surprises arrive.

Envisioning a future war is difficult, particularly as we push beyond a decade. Because of this difficulty, we often default to a predictive rather than a preparatory mindset. Dr. Frank G. Hoffman suggests that thinking about the future “should not be a senseless exercise in eliminating uncertainty and making choices based on clear-cut prediction.”⁴ Pursuing such an exercise can lead to the two major “sins of military futuring,” both of which divert us from thinking about the military implications of strategic change.

The first of these sins is to dwell on grand strategy. What competitor is rising? What nation might collapse? When will a

Future Security Environment vs. Future Operating Environment

The *Future Security Environment* (FSE) refers to political, economic, social, or technological factors that influence national security. It is specifically designed to prepare the Nation for the full range of potential national security problems. The National Intelligence Council's recent *Global Trends: Paradox of Progress* is an example of a well-executed FSE.

The *Future Operating Environment* (FOE) is a composite of the conditions, circumstances, and influences that may affect the employment of the joint force and abide by the decisions of a commander. An *FOE* prepares all or part of the Armed Forces to anticipate and prepare for future military challenges (or potential opportunities). The *Joint Operating Environment* is the Joint Staff's perspective on the *FOE*.

Service futures efforts such as the Army's *Operational Environment and the Changing Character of Future Warfare* or the Air Force's *Strategic Environment Assessment* provide domain-focused perspectives linked to the broader joint view of future warfare found within the *Joint Operating Environment*.

peer competitor's economy surpass our own? Is this nation truly a military peer? These discussions are insufficient for future joint force development. They do not tell us how conflict is changing. They do not focus on the military character of potential adversaries and their evolving stratagem. They do not define how our own missions, capabilities, and operational approaches might need to evolve to outpace our competitors.

The Joint Staff must consider the future to understand the implications of change for the structure and function of the joint force. While appreciating the larger context of the future *security* environment, our focus should be the future *operating* environment and its effects on the joint force.

The second major sin is to place too much emphasis on technological advances. For the military futurist concerned with force development, this means not fixating on the technology, but rather examining its implications for the joint force.

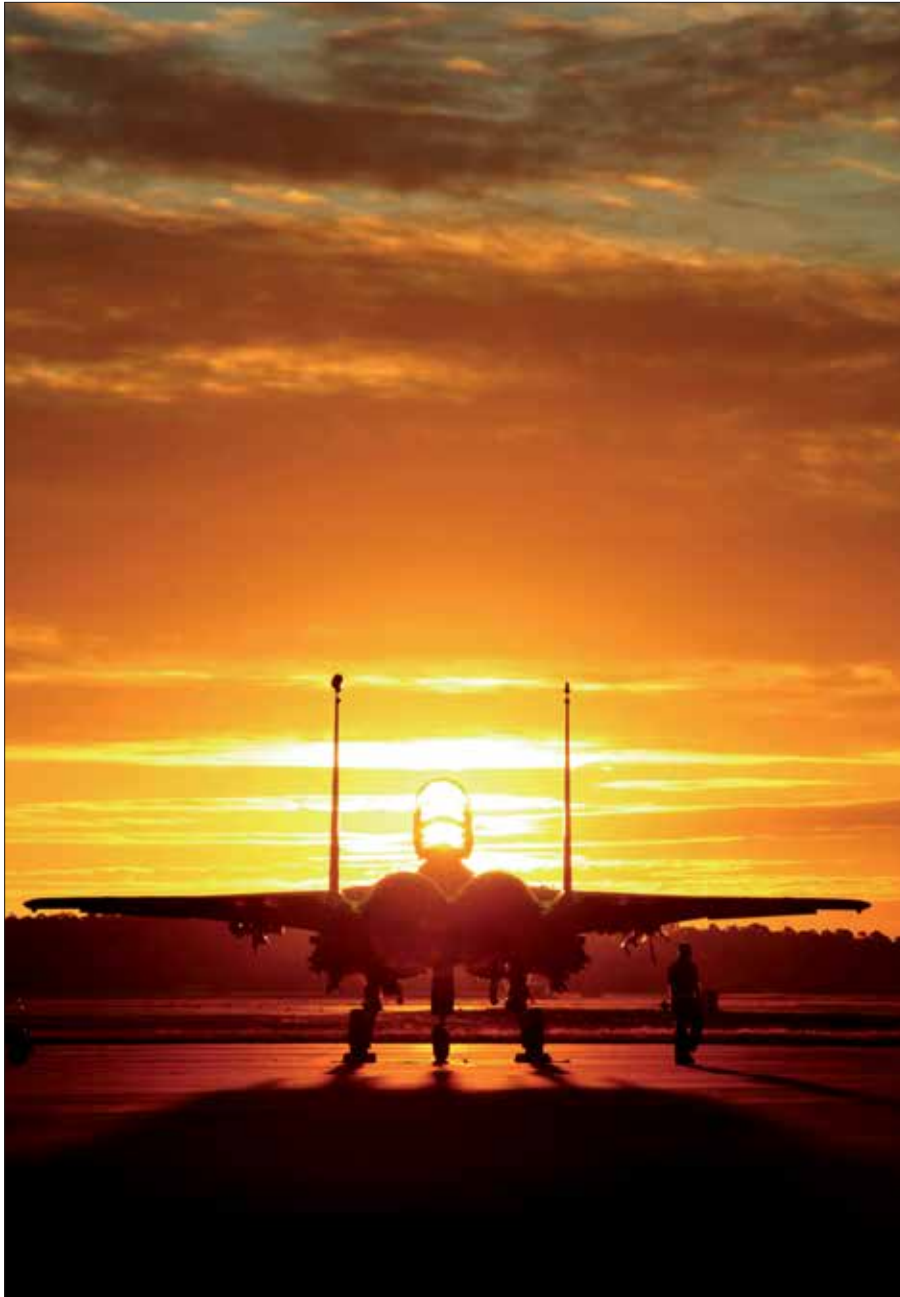
Futurists must think in terms of time. This means that we must strike a balance between *credibility* and *innovation* when making assertions about the changing character of warfare. Credibility relies on thorough descriptions of trends grounded in the intelligence developed through Joint Staff J2 and Defense

Intelligence Agency reporting. We must balance the desire for credibility with sufficient open-mindedness and curiosity to ignore some of the certitudes that anchor us to the present and the familiar. Innovation in futuring requires that we imagine a range of challenging—and even counterintuitive—conditions that might alter our world. The future will be different from the present in important ways. It will not simply be a continuation of today.

This balance between credibility and innovation in our assertions depends on the targeted time frame. We should not elect a time frame so close to the present as to constrain or bound our view of possible changes. But it should remain within a period in which we can reasonably project trends based on the intelligence record and historical experience.

Finally, doing joint futures right means engaging many different perspectives and ensuring that *creative friction* is integral to any conversation. Engaging with partners may require unclassified discussions to include other partners across the Department of Defense, as well as with subject matter experts from the research community, universities and laboratories, and foreign partners.

Perhaps the most difficult part of futuring is understanding where we as a nation and a military force fit into the



F-15 Eagle traveled to Tyndall Air Force Base, Florida, September 17, 2017, to participate in weapons system evaluation program as part of Combat Archer Exercise (U.S. Air Force/Beth Holliker)

broader world. International partnerships remind us that the single most important factor in the future security environment is often the United States itself. The international community gives us a clear-eyed, dispassionate perspective on U.S. strategic strengths, weaknesses, advantages, and vulnerabilities. Our partners help keep us honest by forcing us to examine our own perspectives and assumptions, and how

our activities may be perceived by others around the world.

Thus, doing military futuring right should emphasize change in the operating environment, not overly focus on technologies, and account for evolving adversary stratagem and operational approaches. It should balance credibility and innovation, and target a time frame in which we can reasonably project trends. Finally, the best military futures

planners challenge assumptions and cast a wide net when seeking ideas.

Using Futures to Support Military Change

These ideas are important guideposts for the depiction of a future operating environment that addresses broad changes in the character of conflict. In fact, they guided the Joint Staff J7's Joint Futures series of events and reports that led to *Joint Operating Environment 2035 (JOE)*.⁵ Several versions of the JOE have been issued over the years. The Joint Staff continually monitors change in strategic, social, technological, and military conditions and publishes a new JOE once, as then-General James Mattis noted in 2010, "we have a sufficient understanding to make a new edition worthwhile."⁶

This latest edition of the JOE addresses a growing need for clarity as a number of pressing themes driving new and dangerous sources of military competition became apparent. It describes the future operating environment as driven by two distinct but related sets of security challenges. *Contested norms* describe military challenges resulting from increasingly powerful revisionist states and select nonstate actors that use any and all elements of power to establish their own sets of rules in ways unfavorable to the United States and its interests. *Persistent disorder* is characterized by an array of weak states that become increasingly incapable of maintaining domestic order or good governance.

Reflecting troubling combinations of strategic, social, and technological trends, the JOE notes that the future joint force must be able to confront:

- persistent violent ideological conflicts with transregional terrorist movements and cross-border insurgencies
- the ability of adversaries to threaten U.S. territory and sovereignty and the freedom and autonomy of its citizens
- the reality of persistent great power competition, including long-term technologically advanced adversary military modernization efforts and

- a range of new stratagem to impose their will
- the contesting and disruption of the use of global commons (maritime, electromagnetic, and outer space) in both peacetime and war by adversaries
- the race to define and defend national sovereignty and freedom of action in and through cyberspace
- the global and regional repercussions of shattered or forcibly reordered regions around the world.

These military contexts drive an evolving set of future joint force missions. Each of these future missions in turn demand new operational approaches and capabilities. The future joint force must be prepared to support a range of potential national strategic goals including adapting to changing conditions, imposing change, and enforcing outcomes. It does this through a number of discrete military tasks (for example, shaping or containing conditions and consequences or destroying an adversary's will or capability to resist).

A set of 24 future joint force missions is designed to encourage joint concepts to address what the future force might need to do and be. Additionally, they encourage wide-ranging conversations during concept development about how we balance future missions. Where should the joint force focus its future development efforts in order to address the full range of these potential missions? Should we? Can we?

The JOE defines the missions by the intersection of military contexts with a range of military tasks, including missions to:

- shape or contain challenges or conditions to cope with new situations
- deter or deny to manage the antagonistic behavior of competitors or to impose costs on competitors or adversaries taking aggressive action
- disrupt or degrade forces, capabilities, or initiatives to punish aggressive action by an adversary or force an adversary to retreat from previous gains

- compel or destroy to impose desired changes to the international security environment and subsequently enforce those outcomes.

This span of missions will require a diverse set of capabilities and operational approaches. The joint force may not be able to meet the full range of missions with currently projected capabilities and fiscal limitations. Today's defense strategies are driven by priority missions, which are intended to ensure that joint concepts account for the full range of potential military responses.

Future U.S. strategy will be defined by a range of strategic goals, from adapting to future conditions to imposing change and enforcing outcomes. A family of joint concepts should enable the future joint force to *support a wide range of potential strategic goals*.

The Future of the Future Operating Environment

The ideas found within the JOE set the stage for a more detailed evolution of operational concepts to organize and employ joint forces in the future operating environment. The JOE is the entry point for "rigorously defining the military problems anticipated in future conflict."⁷ Looking into the future in this way can accelerate new concepts to support future strategy and thus identify a foundation on which to build enduring U.S. military advantages.

Dialogue with U.S. and international partners about the future operating environment informs numerous future force development activities across the U.S. military. Vice Admiral Kevin Scott, director of the Joint Staff J7, introduces the JOE by stating, "The ideas here should encourage a dialogue about what the Joint Force should do and be to protect the United States, its allies, its partners, and its interests around the world in 2035."⁸ This approach to the future operating environment has informed concepts for the use of robotics on the battlefield, joint operations in the global commons, and operations in a pervasive information environment. It has assisted in developing an integrated campaigning

concept to address Gray Zone challenges at the cusp between peace and war.

The *Joint Operating Environment 2035* defines the emerging problem set and provides a foundation for focused concept development efforts within the emerging family of joint concepts. As the National Security Strategy and National Defense Strategy alter how we confront and compete with great powers, increase the lethality of our forces, and rally the widest and most powerful set of allies and partners for the arduous path ahead, we will assess the implications of these changes for the view of the future we have articulated in the JOE. We will adapt and refine our vision of the future operating environment and, perhaps, build a new JOE when the time is right. Adapting our joint capabilities through a structured look at the future will continually focus on seeking new operational military advantages for the Nation and ensuring a future joint force with fewer "pre-war mistaken beliefs" than its opponents. JFQ

Notes

¹ Colin Gray, *Another Bloody Century: Future Warfare* (London: Weidenfeld & Nicholson, 2005), 43.

² For a discussion, see Lawrence Freedman, *The Future of War* (New York: Perseus Books, 2017).

³ John M. Lillard, *Playing War: Wargaming and U.S. Navy Preparations for World War II* (Washington, DC: Potomac Books, Inc.), 2006.

⁴ F.G. Hoffman, "The Future Is Plural: Multiple Futures for Tomorrow's Joint Force," *Joint Force Quarterly* 88 (1st Quarter 2018), available at <<http://ndupress.ndu.edu/JFQ/Joint-Force-Quarterly-88/Article/1411221/the-future-is-plural-multiple-futures-for-tomorrows-joint-force/>>.

⁵ *Joint Operating Environment 2035: The Joint Force in a Contested and Disordered World* (Washington, DC: The Joint Staff, July 14, 2017).

⁶ *Joint Operating Environment 2010* (Norfolk, VA: U.S. Joint Forces Command, February 2010), 2.

⁷ *Summary of the 2018 National Defense Strategy of the United States of America: Sharpening America's Competitive Edge* (Washington, DC: Department of Defense, 2018), 7.

⁸ *Joint Operating Environment 2035*, i.