

---

*Information*

---

## **Understanding the Future Battlefield: Building a Future Operating Environment to Support Military Adaptation**

### **Pochopení budoucího bojiště: příprava vojenských sil na budoucí operační prostředí**

**Jeff Becker, Jonh DeFoor**

#### **INTRUCTION**

As we move past the plan of the day, proceed outside of the budget cycle, and venture beyond the ten-year horizon of strategic planning efforts, significant, ongoing changes in the security environment will alter the character of warfare beyond recognition.

The reasons for change in warfare are many. The future security environment is marked by the rise of highly competent and competitive states using combined military and societal power to coerce others, including the U.S. Economic, social, and environmental forces are combining to erode states, governments and societies from below, encouraging widespread and often violent disorder. Meanwhile, rapidly evolving technologies dislocate and upend economies and societies, while threatening to obsolesce or render irrelevant the ways in which NATO forces defend their nations.

Understanding how these tectonic forces might reshape the topography of warfare over time does not come naturally or easily. A cursory look at history illustrates that the future confounds even the most rigorous attempts to predict with any accuracy how it will unfold. Because of this, the outbreak of war often resembles, as the great British Strategist Colin Gray once put it, “A race between belligerents to correct the consequences of the mistaken beliefs with which they entered combat.”<sup>1</sup>

---

<sup>1</sup> Colin Gray, *Another Bloody Century*, (2005), p 43.

## 1 WHY WE LOOK FORWARD

*“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...”<sup>2</sup>*

In the past, describing the future security environment as “complex” was good enough. Until recently hard choices about the needs of future warfare could be deferred. Existential threats to our nations were few. Today, designing a future force on the basis of “complexity” is not only inadequate – it could be lethal. Balanced against the need to be clear, history also reminds us that predictions about the future are frequently wrong. The high degree of error in thinking about the future of war should induce a great deal of humility and caution as we project into the future.

These difficulties do not, however, excuse us as military professionals from considering and confronting change in the character of future conflict.

Take for example, the structure of the U.S. fleet immediately prior to the Second World War. A ‘mistaken belief’ in the 1920’s and 30’s might have been a conviction that the battleship would remain the centerpiece of the U.S. fleet. Aircraft carriers were envisioned to operate in support as the scouting and raiding force. This conviction was set aside at Pearl Harbor and Midway. Adaption and innovation based on decades of thoughtful, structured investigation of the future during the interwar period illustrated how fleet actions might play out and in particular, the uses of the aircraft carrier as a striking arm in wartime.

By thinking about the future in the right sort of ways we can lay the groundwork for adaptation. Not only during war, but on a continuous basis. Correcting the consequences of relying on a battleship-centric naval force was overcome. Admiral Nimitz, reflecting on how the U.S. could rapidly and effectively transition to a new kind of maritime operation during the Pacific War noted that in the Navy’s pre-war foresight efforts meant 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.”<sup>3</sup>

Today, are there closely held, but perhaps mistaken beliefs that we need to examine and challenge? For example, is the U.S. over-reliant on easy assumptions about our operational military superiority and the ability to translate that superiority into effective assurance of allies and partners and deterrence of adversaries? Are we lulled into a false sense of confidence that responding to threats through long range air and seapower and combined arms will necessarily result in military victory and sustained political outcomes? Do we assume away too many logistics, command and control, ISR, and electronic warfare challenges that, unsolved, may challenge our ability to project and operate forces far from home? Have we fully come to grips with the ideological component of warfare, or the political and strategic nature of cyberspace and its effect on military

<sup>2</sup> Carl von Clausewitz, *On War* (Trans. Paret and Howard) 1976/1984, p. 88.

<sup>3</sup> John Lillard, *Playing War: Wargaming and U.S. Navy Preparations for World War II* (University of Nebraska Press, 2016).

operations? Can our armed forces effectively contribute to the defense against multidimensional attempts to subvert our democratic political systems?

Warning signs abound of a potentially dire military future ahead. Antiaccess and area-denial stratagems, competition short of armed conflict, hybrid warfare, and cyber-enabled, global ideological insurgencies all represent a sea change in how adversaries confront the U.S. military. New adversary stratagems and emerging operational approaches will be employed to contest and confound U.S. influence and presence around the world, disconnect us from allies and partners, and to coerce nearby states and sharply circumscribe their ability to pursue and protect their own national interests and ideals free from external interference.

These and other changes in how adversaries are developing and employing military forces suggest the need for urgent efforts to re-envision of how we understand the character of warfare and the requirements to recapitalize the moral, intellectual, and material capabilities of allied military forces if we are to succeed in the future.

## 2 DOING MILITARY FUTURES RIGHT

How did we get here? For military forces, there is a *right* way and a decidedly *wrong* way to think about the future of conflict and war. First and foremost, looking into the future should not be about identifying the potential for specific conflict. Nor is it about pinpointing specific adversaries and their strategies. Futures thinking should not seek to identify the immediate location or proximate causes of the next war.

Rather, doing military futures right is about better preparing our militaries to be ready both materially and mentally for when inevitable surprises arrive. Good military futuring should be about cultivating the intellectual agility and mental resilience that allows militaries to have a sense – much as Admiral Nimitz intimated – of ‘*déjà vu*’ when a crisis or situation arrives. And it is about ensuring the militaries have the tools and operational approaches it needs to be successful in future war.

Bringing future conflict and war to life is difficult, particularly as you push out a decade or more. Because of this we often default to a ‘predictive’ rather than a preparatory’ mindset. Indeed, as the strategist Frank Hoffman relates, thinking strategically about the future “...should not be a senseless exercise in eliminating uncertainty and making choices based on clear-cut prediction.”<sup>4</sup> The consequence of pursuing such a ‘senseless exercise’: two major “sins of futuring” that each tend to divert us from thinking about the *military meaning* of large-scale strategic change.

The first of these sins is that defense futurists tend to spend too much time thinking about grand strategy. For example, what nation or competitor is rising? What nation might collapse? What month will a “peer” competitor’s economy surpass our own? Are they truly a military “peer?” Although interesting, and in fact critical for national security strategy and nation defense purposes, these discussions are insufficient to develop

<sup>4</sup> Frank Hoffman, “The Future is Plural: Multiple Futures for Tomorrow’s Joint Force.” Unpublished.

the capabilities of our future militaries. Grand strategy often has little to say about how conflict and war is changing. It do not focus on the military character of potential adversaries and their evolving stratagems to defeat us. Finally, grand strategy can change over time, and thus our missions, capabilities, and operational approaches might need to evolve in order to outpace and frustrate our competitors and enemies over time.

A better approach is to focus on the implications of strategic and military change for the structure and function of our military force. These implications come in two basic ‘flavors’ which include *challenges* to the way we approach conflict or operate the force and *opportunities* in terms of advantages we can leverage to create challenges for our adversaries or increase the efficiency or effectiveness of joint operations. To prepare the military for the future, we have to recognize the importance of the future *security* environment, but quickly move from the concerns of grand strategy to understand the future *operating* environment and all those things that will bear on the operation and structure of the future force. This difference between the security and operating environment is an important – though frequently overlooked.

#### **Future Security Environment vs. Future Operating Environment**

A *Future Security Environment* is the set of political, economic, social, or technological conditions that influence to propensity or course of cooperation, conflict or war around the world. 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.

A *Future Operating Environment* is a composite of the conditions, circumstances, and influences that may affect the employment of the Joint Force and bear on the decisions of a commander. A 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.

The second major ‘sin’ of defense futurists is a tendency to focus too much on individual technologies or capabilities. Technologies change fast, and keeping up with the universe of technical and engineering advances is a full-time job. Admiring these technologies encourages a great deal of discussion about how quickly a particular capability is developing or whether a technology is progressing “exponentially” verses “linearly.” Sometimes, the focus on the amazing things that the arrival of a particular advance go to do, and less on the “so what” for our militaries and for warfighting. For the mili-

tary futurist, the study of technology should not focus on technology but on examining the meaning of the change for our militaries.

Thinking about the future in a useful way also requires us to think in time. This means that we must strike a sometimes delicate balance between the *credibility* and *innovation* in our various observations about the changing character of future warfare. Any view of the future must present a credible, thorough description of changing trends – that is, it must be grounded in reality and in the intelligence record.

This desire for credibility must also be balanced with enough open-mindedness and curiosity to step outside some of the certitudes and assumptions that anchor us to the today and to the familiar. Innovation in defense futuring requires that we imagine the range very challenging – and even counterintuitive conditions that might alter our world. The future will be *different* from today in important ways. It will not simply be like today, only more-so.

This balance between credibility and innovation in our assertions is highly dependent on the time frame or window into the future we select as our target. Selecting a time frame should not be so near-in as to constrain or tightly bound our view of possible changes. It should also not so far out as to be completely disconnected the intelligence record and historical and cultural experience.

**To Win Battles, Know Yourself:  
International Perspectives and Military Futures**

Perhaps the most difficult part of futuring is understanding where we, as a nation and as a military force fit into the broader world. Military intelligence analysis does not focus on domestic issues, nor does it analyze itself as an international actor. International partnerships remind us that in many cases, the single most important factor in the future security environment is the U.S. itself.

The military and intelligence community does not naturally do this, and it is a place we need a clear-eyed, dispassionate perspective on the strategic strengths, weaknesses, advantages and vulnerabilities of the United States.

It is here that the United States gets a great deal of insight from working with our international partners. Our allies and partners we talk with speak with us frankly about how they see the United States in the world, however unfamiliar or uncomfortable this perspective may be. Although we may not always agree, our international partnerships help to 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.

Finally, doing joint futures correctly means engaging with many different perspectives, and ensuring that ‘creative friction’ is integral to any conversation. Engaging with partners may require unclassified discussions to include not only partners in across the Department

of Defence, but also subject matter experts from the research community, universities and labs, and foreign partners with whom we may—or may not—share classified data.

Thus, doing military futuring right should emphasize change in the operating environment, not be overly focused on technologies and ensure that evolving adversary strategies and operational approaches are accounted for. It should fully explain the particular balance of credibility and innovation selected, and also articulate a coherent time frame when the conditions described are expected to arrive. Finally, the best military futures challenge assumptions and collect the widest set of good ideas possible.

### 3 USING FUTURES TO DRIVE MILITARY CHANGE

These ideas can serve as important guideposts to develop a view of the future operating environment capable of helping to build a force capable of addressing *broad changes in the future character of conflict* that a future military commanders may face. These guideposts helped to define the view of the future found in the Joint Staff J7's *Joint Operating Environment 2035: The Joint Force in a Contested and Disordered World (JOE 2035)*.

#### Contested Norms and Persistent Disorder

The Joint Staff J7's *Joint Operating Environment 2035* describes the future operating environment as driven by two distinct but related sets of security challenges.

The first of these, *contested norms*, describes military challenges resulting from increasingly powerful revisionist states and select non-state 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. The second, *persistent disorder*, is characterized by an array of weak states that become increasingly incapable of maintaining domestic order or good governance.

Several versions of the JOE have been issued over the years. In 2010, then-General James Mattis, commander of United States Joint Forces Command noted that the study would be updated “once we have a sufficient understanding to make a new edition worthwhile.” This edition of the JOE addressed a growing need for clarity as important themes driving military change became apparent.

Reflecting a troubling combinations of strategic, social, and technological trends, the JOE notes that 2035 militaries will be confronted by:

- Persistent violent ideological conflict with transregional terrorist movements and cross-border insurgencies.
- Adversaries who threaten home territory and sovereignty and the freedom and autonomy of its citizens.

- Persistent, ongoing great power competition, including long term, technologically advanced adversary military modernization efforts and a range of new stratagems to impose their will.
- Adversaries contesting and disrupting the use of global commons (maritime, electromagnetic, and outer space) in both peacetime and war.
- A 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 military missions. Each of these future missions in turn demand new operational approaches and capabilities. Our militaries will all prepare to address challenges across range of potential national strategic goals from adapting to changing conditions to imposing change and enforcing outcomes. It does this through a range of more discrete military tasks from shaping or containing conditions and consequences, through compelling and destroying an adversary's will or capability to resist U.S. desires.

A set of twenty-four future military missions (found in section 3 of JOE 2035) are designed to encourage future military concept and force development efforts to address what the future force might need to do and be in the future. Additionally, they are intended to encourage wide ranging conversations during concept development efforts about how we achieve balance among the many missions the future may throw at us. Where should our militaries focus scarce resources to address these potential missions?

In *JOE 2035*, the missions are defined by the intersection of the military contexts with a range of tasks that forces may be ordered to address, including missions to:

- Shape or contain challenges or conditions to cope with a new situation
- Deter or deny in order 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 in order to punish aggressive action by an adversary or to force an adversary to retreat from previous gains.
- Compel or destroy in order 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 – some of which may not be available to our military forces today.



U.S. strategy in 2035 may look different than it does today. 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 militaries to *support a wide range of potential strategic goals*.

## CONCLUSION - THE FUTURE OF FUTURE WARFARE

The character of conflict always changes, but today the Chairman describes this shift in terms of military challenges to the nation that are increasingly *transregional*, *multidomain*, and *multifunctional* in nature.<sup>5</sup> Additionally, the entirety of the nation is engaged over multiple dimensions as well. As the latest U.S. National Intelligence Council Global Trends study notes:

*“Future conflicts will increasingly emphasize the disruption of critical infrastructure, societal cohesion, and basic government functions in order to secure psychological and geopolitical advantages, rather than the defeat of enemy forces on the battlefield through traditional military means.”*<sup>6</sup>

In 2035 our nations will be confronted by adversaries that employ integrated, whole-of-government efforts intended to nullify current U.S. and allied advantages and leverage new and dangerous technical and weapons capabilities, often employed in new and surprising ways.

The ideas found within *JOE 2035* were intended to set the stage for a more detailed conversation about how the U.S. military can achieve success in the future operating environment. Looking into the future in this way is intended to accelerate new ways – or concepts – to address the likely needs of future strategy and thus, identify a foundation upon which enduring U.S. military advantages can be built.

Ongoing dialog about the future operating environment among our partners is a jumping off point for a wide range of future force development activities across U.S. military. As Vice Admiral Kevin Scott, Director of the Joint Staff J-7 notes in the foreword to *JOE 2035*, “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.”<sup>7</sup>

This dialog is already well underway. This approach to the future operating environment has informed or accelerated many joint concept development efforts. These include, for example joint concepts the use of robotics on the battlefield, on joint operations in the global commons and in a pervasive information environment. It has assisted

<sup>5</sup> Jim Garamone, “Dunford: Command, Control Must ‘Keep Pace’ in the 21<sup>st</sup> Century,” *Department of Defense News*, (4 January, 1016).

<sup>6</sup> National Intelligence Council, *Global Trends: Paradox of Progress* (January 2017), p. 7

<sup>7</sup> Joint Staff J-7, *Joint Operating Environment 2035: The Joint Force in a Contested and Disordered World*, (14 July 2017), p. i.

in developing an integrated campaigning concept to address ‘grey zone’ challenges at the cusp between peace and war.

We hope that the ideas here are helpful to our allies and partners as they think thorough the conditions facing their own nations and the military forces they will need to survive and prosper in the future.

This effort will continually seek to uncover and build towards new operational military advantages for the Allied militaries to exploit over the next several decades to ensure a future Joint Force – and the military forces of our partners – have fewer “pre-war mistaken beliefs” than our opponents.

***This paper is derived from “Exploring the Future Operating Environment”, published in Joint Force Quarterly, April 2018. The article was presented at the Defense & Strategy 2018 conference.***

***Tento příspěvek vychází z článku “Exploring the Future Operating Environment”, který byl publikován v časopise Joint Force Quarterly v dubnu 2018. Příspěvek byl prezentován konferenci Defence&Strategy 2018.***

---

**Authors:**

***Mr. Jeff Becker, is a defense consult based in Southeast Virginia. Mr. Becker is currently the Senior Futurist at the Joint Concepts Division of the Joint Staff J7. Mr. Becker has over 19 years of direct experience conducting and managing future military studies, analysis, and experimentation projects. He has provided analytic support to a wide range of clients interested in considering the implications of strategic and military change for the structure and function of military forces and national strategy.***

***John E. DeFoor, is Chief of the Futures Branch, Joint Staff J7.***