Soldiers stack on a wall during live fire certification training at Grafenwoehr Army base, 17 June 2014.
(Capt. John Farmer)

Army Experimentation
Developing the Army of the Future—Army 2020

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The Chief of Staff of the Army directed the effort to redesign the Army of 2020 in response to increasingly constrained resources and changes in defense strategy. As the Army begins to reduce its active force from 570,000 to 490,000 or less, and as budgets continue to shrink, it is critical to design an effective warfighting force around the new numbers.[1] The Army is at a crossroads and must determine how it will remain a globally effective force based in the continental United States, under resource constraints.

A History of Drawdowns

All U.S. military services faced such challenges when forces drew down after World War II, Korea, and Vietnam. As the largest service, the Army's challenges during the 20th century were particularly significant as it sought to retain the force structure it anticipated needing for future commitments.[2] The Army's difficulties were exacerbated when political pressure to cut costs accelerated the reduction of the force. Drastic reductions of the Army after World War II to meet fiscal constraints, for example, caused many units to become below strength and under trained. When the Korean War began, the Army was woefully underprepared for the conflict and experienced embarrassing defeats as a result.[3]

After Vietnam, the Army conducted a drawdown that led to the "hollow force" of the late 1970s and early 1980s.[4] To counter this deterioration, the Army focused on developing a contemporary force through what was known as "the Division 86 Project."[5] The subsequent reorganization was based on a concept called *AirLand Battle*, which became the Army's warfighting doctrine of the mid-to-late 1980s. Thus began a modern era of thought focused on anticipating how combat would be fought in the future and what the Army would need to remain successful in accomplishing its mission. Experimenting with different ideas was a common approach to analyzing the potential effectiveness of the new organizations, without combat. These early experiments represented future threats and capabilities in a projected environment and then evaluated the results of these war games to determine the validity of the emerging concepts.

The ability to create and examine tailored learning venues that replicate the Army's complex challenges remains the *raison d'être* of operational experimentation. Today, Army experimentation continues to examine future force structures and force reductions (both human and hardware) in real-world scenarios. Training and Doctrine Command (TRADOC) runs Army experimentation through organizations subordinate to its Army Capabilities Integration Center. The Joint and Army Experimentation Division, the concept development and integration directorates at each Army center of excellence, and other partners conduct experimentation. Experimentation is an objective method of determining the capabilities, organization, and command and control needed to counter any threat at any anticipated time or place. The Army models, simulates, and war games various force structures and unit designs to determine the most effective use of its limited resources. This deliberate process reduces risk to soldiers and increases the odds of getting things right the first time a force faces real-world adversaries. In the past few years, some experimental designs have worked well, while others have not.

Starting in 2012, the Army embarked on a three-year effort to examine implications of "Army 2020," assessing major force design changes that would transition the force from an Army involved in two intensive conflicts to a peacetime Army capable of meeting any threat. This article discusses the results of experiments in fiscal years (FYs) 2012 and 2013. The Joint and Army Experimentation Division uses a collaborative approach for investigating critical issues through an experimentation community of practice comprised of TRADOC and Army battle laboratories and other joint and interagency stakeholders.[6]

Fiscal Year 2012 Experimentation

In FY 2012, the community focused on force design; reconnaissance and surveillance capabilities; intelligence, sustainment, and communications capabilities; and command and control requirements. The yearlong 2012 experimentation plan investigated and assessed proposed force design concepts through a wide range of military operations. The experiments emphasized a traditional conventional war fight that included preconflict and postconflict challenges. The base platform (scenario) for the experiment used a valid near-peer adversary in a realistic operational environment.

Army experimentation began to use a complete major operation in 2012, linking activities from beginning

to end through all joint operational phases.[7] The joint phasing construct provided a comprehensive framework to assess ideas under investigation—applied in peace and war, across various time periods, and in disparate, widely dispersed geographic areas. Execution of the FY 2012 experimentation plan constantly evolved as emerging insights revealed a need for deeper investigation of some areas or additional investigation in entirely unanticipated directions. Table 1 summarizes FY 2012 experimentation findings.[8]

Experimentation in FY 2012 reinforced the critical observation that the Army cannot design and attempt to execute a land campaign without deliberate consideration of war termination issues and without the involvement of unified action partners.[9] War termination planning must consider the support and protection of populations and forces, including protection of critical enablers during withdrawal. Also apparent from experimentation in FY 2012 (and previous years) was that while we are developing a highly capable Army, its capability derives from a fragile foundation of enablers. We must exercise caution to prevent the condition of these enablers from becoming an Achilles heel.

Fiscal Year 2013 Experimentation

Experiments in FY 2013 built on the results of the 2012 experiments. In 2013, the community sought to assess the integration of Army force design initiatives and proposed solutions for mitigating capability shortfalls. Originally, over forty initiatives had been associated with Army 2020. In FY 2013, the Army identified eight critical areas it would use to assess organization changes, interdependencies, and capabilities the future force would need to achieve operational and tactical objectives:[10]

- Brigade combat team reorganization.
- Reconnaissance and surveillance brigade combat team (later changed to reconnaissance and security).

Issues	Findings
Collapse an echelon of command and control	Merging theater Army and corps creates a span of control too broad for commanders and staffs as currently organized.
Echelons above division functional alignment; assess Army advisory capability	Functional alignment at echelons above division along warfighting functions did not gain efficiencies for maneuver support or medical support. Advisory efforts must be tailored for each mission and culture, and for support of unified action partners.
Assess Army's role in conflict prevention through shaping and countering anti-access and area denial	Military operations must be viewed in a whole-of-government context. Department of Defense (DOD) and Department of State (DOS) need integrated plans that establish unified objectives and activities.
Regionally aligned corps, divisions, and brigades	Improve the Army's ability to engage with other nations' military forces and civil agencies.
Reconnaissance and surveillance brigade	The proposed structure had insufficient combat power to support commanders at echelons above brigade. The design was modified to a reconnaissance and security brigade combat team (BCT), which allowed it to function as intended.
Special operations forces and conventional forces integration	There is a need for an Army overarching concept to facilitate interdependence among special operations forces and conventional forces.
War termination	DOD and DOS need to lay out a framework for war termination planning, before commencing joint forcible entry.
Assess interdependencies with unified action partners	The Army and the other services will become more interdependent with unified action partners, requiring identification of capabilities and gaps.

Table 1. FY 2012 experimentation findings

Factors studied	Findings
Combat power of brigade combat teams	Army 2020 force design updates *increase* the combat power of the brigade combat team.
Operations at corps and division	Army 2020 force design updates and legacy systems limit corps and division commanders' ability to control operational tempo and limit flexibility of assigning missions to subordinate units.
Assets for division and below	Army 2020 force design updates result in critical shortfalls in the number of surveillance, reconnaissance, military police, engineer, air and missile defense, network, and intelligence assets available at division and below.
Low-density, high-value assets	The vulnerability of low-density, high-value assets creates risk to the mission and the force.
Skills for conducting major combat operations	Basic skills required for the conduct of major combat operations have atrophied or are nonresident.
Implementation of new designs	Commanders must take into account the additional time, training, and integration required by the Army 2020 force designs.
Air-ground interactions	The increase of air-ground interactions (such as fixed wing, rotary wing, unmanned aerial vehicle, air defense artillery, rockets, mortar, and missiles) has created a complex airspace coordination problem.
Command and control	Army 2020 force design updates increase command and control challenges and require a greater understanding of battlefield systems.
Doctrine	Army 2020 will require updates to and clarification of doctrine.
Integration, coordination, and synchronization of forces	Army 2020 increases the capability to integrate, coordinate, and synchronize assets at corps and division.

Table 2. FY 2013 experimentation findings

- Fires.
- Sustainment design and support concept.
- Intelligence 2020 initiatives.
- Protection and maneuver support.
- Aviation.
- Medical.

The 2013 experimentation campaign was composed of six events designed to address sequenced operational activities including theater shaping, transition to combat, combat, and transition from combat to peacetime. Each experiment evaluated organization design, organization performance, capabilities required to perform tasks, and personnel skills executed across the joint operational phases. Table 2 summarizes the FY 2013 experimentation findings.[11]

In a cooperative effort with 2nd Infantry Division, aspects of Army 2020 were included in the division's Mission Command Training Program *Warfighter* exercise conducted in Korea in December 2013. This provided an opportunity to "test drive" select Army 2020 initiatives in a real-world environment and captured subject matter expert feedback on Army 2020 operational and organizational concepts. This event examined operations in a certain set of conditions, within an exercise environment that imposed a particular set of constraints, limitations, and assumptions. Despite these limitations, the event provided an essential operational perspective to augment experimentation results.

Both years of Army-level experimentation, followed by a 2014 division-level operational assessment, yielded very consistent results on the impact of future force designs on the Army's posture.[12] These findings merit deliberate consideration for future force design, development, and implementation.

Army 2020 designs generally performed as intended. However, it became clear that *resiliency must be a*

significant consideration for future force designs. Army 2020 designs approach prudent limits on the useful extent of force pooling, require excessive task organization (which introduces significant training and span of control challenges), and place increasing reliance on low-density, high-value enablers.

Conclusion

The examination of Army 2020 initiatives will lead to better force design and planning factors for assessment. Later in 2014, the Joint and Army Experimentation Division expects to disseminate a new document describing the Army 2020 organizational and operational concept.[13] This document will discuss the successes and challenges experimentation has identified with the Army 2020 force construct. All units in the operating force undergoing transformation are expected to receive the document as part of an educational support package.

Systemic pressures such as budget and force reductions have forced the acceleration of Army 2020 concepts and planning factors for implementation in 2015. Therefore, the Army is shifting its focus to 2025. The force needs to assess not only the characteristics of the threat but also how to meet and defeat it. As the Army marches into the future, experimentation remains the most cost-effective and lowest risk venue to test new concepts. The use of modeling and simulation, war games, and other types of experiments allow the Army to explore capabilities and force designs *before* investing scarce resources. Experimentation helps identify challenges, risks, and opportunities. Finally, it ensures that today and tomorrow the U.S. Army will remain the pre-eminent land force in the world.

Notes

1. Congressional Research Service report, *Army Drawdown and Restructuring: Background and Issues for Congress,* by Andrew Feikert, R42493, prepared for members and committees of Congress. Washington, DC: United States Government Printing Office [GPO], 28 February 2014, 14.

2. Combat Studies Institute (CSI) report, *Sixty Years of Reorganizing for Combat: A Historical Trend Analysis*, no. 14, prepared for the U.S. Army Combined Arms Center. Fort Leavenworth, KS: U.S. Army Command and General Staff College, Combat Studies Institute, December 1999, 16.

3. Ibid., 16-17.

4. Congressional Research Service, 28.

5. Combat Studies Institute, 41-49.

6. The Joint and Army Experimentation Division (JAED) of ARCIC, TRADOC battle laboratories, and Army battle laboratories collaborate as the Army's experimentation community of practice. Other joint and interagency participants include sister services, Department of State representatives, unified action partners from the UK, Australia, and Canada, and other government agencies.

7. For joint operational phases, see Joint Publication (JP) 3-0, *Joint Operations* (Washington, DC: GPO, 11 August 2011), V-6. Phases 0 through V represent efforts before, during, and after combat operations.

8. Data in table 1 originally appeared in an internal Army 2020 assessment report prepared by ARCIC in 2014.

9. The phrase *unified action partners* captures all types of entities with whom military forces synchronize, coordinate, and integrate activities (formerly called joint, interagency, intergovernmental, and multinational [JIIM] partners).

10. A 2012 TRADOC tasking order outlined a plan for Army 2020, based on the concept originally developed by Department of the Army. The order had listed 40 issues to be addressed; the JAED staff selected eight areas for experimentation.

11. Data in table 2 originally appeared in an internal Army 2020 assessment report prepared by ARCIC in 2014.

12. A draft Army 2020 Organizational and Operational Concept was under development at the time this article was prepared, in cooperation with the staffs of the JAED, the 2nd Infantry Division, the 8th Army, the Mission Command Training Program, and other members of the community of practice.

13. Internal Army 2020 assessment report prepared by ARCIC in 2014.