

# Tenets of Army Modernization

by Lieutenant Colonel Hassan M. Kamara, U.S. Army



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## **In Brief**

- This paper defines and presents tenets of Army modernization to foster a practical understanding of the concept in support of the broader discourse.
- Army modernization is the progressive transformation of the critical elements by which the Army defines, constructs and operates itself—Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities and Policy (DOTMLPF-P)—from the present or traditional context to the future.
- Modernization occurs when progressive transformation ventures, successfully implemented across DOTMLPF-P components, holistically enhance the Army’s ability to accomplish its mission. This analysis will help new professionals to develop a practical understanding of Army modernization for dialogue and application.

# Tenets of Army Modernization

## Introduction

*We are at a similar inflection point to the one our leaders faced coming out of Vietnam, and like them we have to ask ourselves: Are we building the Army than can compete and win for the next 40 years?*

—Chief of Staff of the Army General James C. McConville<sup>1</sup>

This paper defines and presents tenets of Army modernization to foster a practical understanding of the concept supportive of the broader discourse on the topic. The content is particularly beneficial to succeeding generations of Army professionals who will join the Army modernization enterprise, continuing the institution’s ongoing efforts to progressively transform for victory.

What is Army modernization? It is the progressive transformation of the critical elements by which the Army defines, constructs and operates itself—Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities and Policy (DOTMLPF-P)—from the present or traditional context to the future. Specifically, modernization occurs when progressive transformation ventures, successfully implemented across DOTMLPF-P components, holistically enhance the Army’s ability to accomplish its mission.

The ensuing analysis of this definition of modernization and of the DOTMLPF-P framework will provide a collective understanding to facilitate dialogue and application to Army modernization planning and execution. Moreover, this discourse is particularly valuable in the contemporary era of volatile global security affairs compounded by defense resource constraints.

## Modernization Theory and the DOTMLPF-P Framework

The preceding definition of modernization is influenced by the literature on modernization theory and by the understanding that the elements of the DOTMLPF-P framework collectively determine how the Army defines, constructs and operates itself. The literature on

modernization theory, in particular the work of Seymour Lipset and W.W. Rostow, is particularly influential. The works of these scholars are seminal to modernization theory, which seeks to promote the understanding of how human societies evolve.

Seymour Lipset, in *Political Man: The Social Bases of Politics*, views the modernization of human societies in terms of the development of democracy. Lipset formally examines traditional theories of how democracy evolves in societies through empirical analysis of causative factors such as education and economics. Lipset's approach informs our use of the DOTMLPF-P framework to study and understand Army modernization.

In his book, *The Stages of Economic Growth*, W.W. Rostow theorizes that societies modernize by progressing through stages of socio-economic growth influenced by politics. Rostow identifies the stages as: the traditional society; the preconditions for take-off period; the take-off; the drive to maturity; and the diversion of the mature economy. With Rostow's theory in mind, we can understand the dynamics of cause and impact that shape Army modernization.

Modernization theory facilitates intellectual inquiry into how societies evolve politically and socioeconomically. Over time, different theorists have identified and argued over what constitutes modernization of human societies—the causes, trajectory of change, phases of change and implications. However, what appears consistent across the literature is the generally accepted view of modernization as a progressive transition, from the present to the future, of different aspects of human affairs (politics, economics, society, military, etc.).

Modernization theory thus offers a theoretical basis for the understanding that, as a part of human society, Armies progressively evolve or modernize, thus the term *Army modernization*. Subsequently, the ensuing discourse analyzes Army modernization in terms of the foundational elements that constitute how the Army defines, constructs and operates, namely in the context of DOTMLPF-P.

The DOTMLPF-P transformation framework is an effective approach that the U.S. Army uses to conceive, plan and implement organizational change. Modernization or change ventures implemented across the DOTMLPF-P components enable the Army to holistically evolve. Using historic and contemporary examples, the ensuing analysis shows how the progressive transition of each component of the framework spurs change in the others to modernize the Army.

## **Doctrine**

Military doctrine comprises principles that guide planning and implementation of the range of missions that an armed service can be called upon to execute. According to RAND, military doctrine is “the fundamental set of principles that guide military forces as they pursue national security objectives. . . . These principles . . . can range from the policies and procedures put in place by a particular military branch to the tactics and techniques taught to new members during training.”<sup>2</sup>

Military affairs scholar Barry R. Posen describes doctrine, consistent with the preceding definition, in *The Sources of Military Doctrine: France, Britain, and Germany Between the World Wars*. He defines doctrine as “a subcomponent of grand strategy that deals explicitly with military means.”<sup>3</sup> According to Posen, while grand strategy is how a state plans to secure itself and its interests, doctrine guides which military means the state will employ and how it will apply those means. He explains that doctrine “includes the preferred mode of a group of services, a single service, or a subservice for fighting wars.”<sup>4</sup>

As the preferred approach to warfighting, doctrine influences a military institution's organizational structure, training and equipping, among other areas; but this is not always the case—the reverse can occur. In other words, as a component of the DOTMLPF-P modernization framework, changes in doctrine can spur modernization, while changes in other aspects of the framework can spur doctrinal change. Doctrine spurs modernization through analysis and study of previous conflict, through contemporary threat and operational requirements and through experimentation with the different arms of a military service. During the interwar years between World Wars I and II, the German Army (the *Reichswehr*) exemplified an excellent case of doctrinal change driving army modernization.

In the *Reichswehr*, doctrinal reform stemmed from focused, in-depth analysis and study of war, the profession of arms and bold experimentation. James Corum writes that “of all the general staffs of the era, the German general staff had perhaps the strongest tradition of studying war in a critical fashion while providing objective analysis of military operations.”<sup>5</sup> Consistent with tradition, German officers studied and wrote extensively on the strategic, operational, tactical and technological successes and mistakes made during World War I.<sup>6</sup>

According to Corum, the German Chief of General Staff Hans von Seeckt, appointed in 1920, believed that World War I proved that maneuver was superior to firepower; he visualized future war as a largely mechanized maneuver affair.<sup>7</sup> Subsequently, Hans von Seeckt focused a significant amount of the Army's Officer Corps on studying World War I and on exploring ideas for improving maneuver doctrine using new technology. Williamson Murray writes that von Seeckt ultimately tasked over four hundred officers with combat experience (roughly 10 percent of the officer corps organized in different committees) to study World War I doctrine and tactics. This resulted in “the extraordinary Army Regulation [AR] 487 (‘Leadership and Battle with Combined Arms’).”<sup>8</sup> This regulation (published from 1921–1923) changed the focus of German doctrine from defensive to offensive maneuver and boldly reformed unit formations, maneuver and tactics. For example, according to Corum, AR 487 reinforced the *Reichswehr*'s cavalry with “mobile support troops—bicycle troops, motorized infantry and artillery.”<sup>9</sup>

Conversely, modernization can spur doctrinal development through technological innovation. In other words, a military service can identify additional or broader application of an existing technological innovation and develop doctrine to harness and exploit its capabilities. This was the case with helicopter technology and the development of airmobile doctrine in the U.S. Army: The Army employed helicopters during the Korean War (1950–53), but they were used primarily for supply transport and for medical evacuation. After the Korean war, the combat maneuver community (infantry and cavalry) assessed that helicopter technology could be exploited for maneuver in addition to employment for logistics support. In this regard, Lieutenant General James Gavin, who formerly commanded the 82nd Airborne Division in World War II, wrote a letter to the Chief of Army Field Forces in July 1954 assessing that the logistical support role of helicopters should be made secondary to tactical maneuver. Christopher Cheng writes, “In the same letter, Gavin asked the combat arms [community] to find applications for helicopter transport to meet their doctrinal needs.”<sup>10</sup>

Consistent with Gavin's assessment, in March 1955, the Army published new doctrine, *Training Circular 1-7: Employment of Army Transport Aviation*, stressing that tactical maneuver was the helicopter's primary function—logistics was an additional function. According to Cheng, this doctrinal publication expressed that the role of “Army transport aviation was to

move Army combat units operationally by air. This could involve airborne operations and air-landed operations.”<sup>11</sup> This doctrinal publication replaced the 1950 *Training Circular 19: Transport Helicopter Company (Army)*, which had undergirded the role of helicopters primarily as logistics support.

## Organization

The Organization component of the DOTMLPF-P framework refers to authorized, staffed and financially supported structures within a service that are created to fulfill a specific mission. According to the U.S. Joint Staff, this component “pertains to a joint unit or element with varied functions enabled by a structure through which individuals cooperate systematically to accomplish a common mission and directly provide or support joint warfighting capabilities.”<sup>12</sup>

Like doctrine, a progressive change in organization can spur modernization across the framework and, in other cases, be triggered by modernization within other elements of the framework. In other words, militaries sometimes make organizational changes to spur modernization, and they will make organizational changes in response to developments in doctrine and, in some cases, materiel development.

During the interwar years, von Seeckt embarked on a series of organizational changes to fully capitalize the intellectual talent pool of the German Officer Corps for modernization amidst the Versailles Treaty sanctions. Through methods that included reconstituting and merging subordinate organizations within the army and broader government, von Seeckt successfully retained core functions that were vital for army modernization. For example, though the Versailles Treaty called for the dissolution of the German General Staff, von Seeckt retained the highly trained staff personnel and dispersed them across the regular army and government. According to James Corum, “In November 1919, when von Seeckt officially dissolved the General Staff, its core, the Operations Section, was preserved in the Truppenamt (Troops Office), which consisted of about sixty officers. Other sections of the old General Staff were simply transferred to other government departments.”<sup>13</sup>

In his efforts to fully exploit intellectual talent in the Reichswehr, von Seeckt also shaped the retention criteria for force reductions in favor of retaining top talent. According to Corum, “Von Seeckt wanted to give officer retention preference to the General Staff Corps members because of their experience in army organization and higher command planning.”<sup>14</sup>

His reorganization efforts helped the Reichswehr to modernize by preserving and concentrating available intellectual capital on the progressive transformation of doctrine and the other components of the modernization framework. For example, his focused application of intellectual capital to doctrinal development in the Reichswehr led to the development and publication of AR 487, *Leadership and Battle with Combined Arms*. This change in doctrine came with changes to the structure of the Reichswehr’s line unit formations to increase their maneuver, fires and reconnaissance capability. The institution improved the staffing and equipment construct of the Army’s Cavalry Divisions (increasing the amount of motorized artillery and enablers for deeper reconnaissance) and Infantry Divisions (increasing mobile artillery, reconnaissance forces, signals and communications infrastructure and observation aircraft).<sup>15</sup>

While the preceding historic example shows that an Army can make progressive organizational changes to modernize, transformation in the other DOTMLPF-P components can also induce changes to organizational structures within a military service. For example, as

previously discussed, sustained doctrinal development in air mobility in the mid-1950s drove organizational structural changes to foster understanding and application of the helicopter to tactical maneuver. According to Christopher Cheng, “From 1955 to 1957 the Army evaluated three different experimental sky cavalry organizations (for supporting different types of division) during three major exercises (SAGE BRUSH, JUMP LIGHT and SLEDGEHAMMER).”<sup>16</sup> Sustained innovation with doctrine and the experimental sky cavalry organizations would subscribe to the creation of the 11th Air Assault Division for further testing of helicopters and Air Mobile operations development.

## **Training**

The Training component of the DOTMLPF-P modernization framework merits a place in the framework because it is integral to the normalization of change in the other components. Within this framework, training is the complement of knowledge and skills that Army personnel need to perform their duties for the successful operation of the enterprise and the fulfillment of its mission. There can be no lasting change in doctrine, organization, equipment or materiel without the successful adaptation and inculcation of new training methods for sustained mission accomplishment. Failure to adapt in the Training component will undermine and unravel changes in doctrine, organization and equipment due to mission failure.

Training adaptation is typically driven by progressive changes in doctrine and materiel or equipment. Such changes typically require the Army to train and develop proficiency based on the new *modus operandi* propagated by the emerging doctrine and based on the newly introduced equipment. For example, to maintain operational effectiveness in the integration of Air Mobile doctrine and helicopters, the U.S. Army had to retrain combat arms personnel in the newly renamed 1st Cavalry Division (Air Mobile). This training adaptation was central to the unit’s success in the 1965 Battle of the Ia Drang Valley.

Once again, this component’s importance is excellently illustrated by the Reichswehr’s modernization during the interwar period, 1919–1933. It was during this time that the German Army built highly proficient formations. It emphasized mission command, physical fitness and unit training that all entailed frequent and rigorous exercises and simulations. According to Williamson Murray, von Seeckt’s training goal from 1921 onward was to create in each Reichswehr soldier a confident leader who welcomed responsibility.<sup>17</sup>

*Mission command* is the term used to describe the “decentralized execution” of mission tasks (outlined in “mission type orders”) by subordinates using “disciplined initiative” and independent aggressive action.<sup>18</sup> From 1919–1933, the German Army trained leaders at all levels to think through problems and develop sound solutions within the intent of the mission. According to Williamson Murray, AR 487 promoted mission command by “demanding that commanders decentralize operations to the lowest level possible.”<sup>19</sup> Mission command, or *auftragstaktik*, was emphasized in unit training and professional education. According to James Corum, von Seeckt considered it “of fundamental significance that . . . leaders were taught to be independent-thinking and acting men and . . . understand when to act independently and when to wait for orders.”<sup>20</sup> Robert Citino concurs by writing that von Seeckt exhorted commanders to foster independent and critical thinking among their Soldiers: “Mental elasticity was to be the imperative goal of men and officers.”<sup>21</sup> This approach to training was emphasized in large part due to the institution’s understanding that the pace of future wars would necessitate aggressive, imaginative combat leaders who would take disciplined initiative to meet their commanders’ intent.

The Reichswehr also emphasized physical fitness reforms. Physical fitness requirements were instituted to enable soldiers to operate with greater efficiency at the Army's fast paced training tempo. According to Robert Citino, physical fitness was one of the three areas that von Seeckt emphasized the most (the others being "youthful enthusiasm," i.e., active interest and participation, and "skill at combined arms warfare") to maintain readiness and morale during long summer exercises, which "taxed many of the men to the limits of physical endurance."<sup>22</sup>

The publication of new manuals, such as AR 487, focused German Army unit training on combined arms maneuver. Individual through Company-level training was emphasized to build a strong base of tactical knowledge among junior leaders for maneuver warfare. According to James Corum, "In 1922, the unit training program emphasized retraining squads, platoons and companies in accordance with new infantry regulations."<sup>23</sup> Robert Citino writes that "One of the most important manuals of the von Seeckt era was the *Training of the Rifle Squad (Ausbildung der Schutzengruppe, or A.d.S.)* issued in December 1921," which entailed, among other things, details on the composition and combat maneuver of the infantry squad in combined arms warfare.<sup>24</sup>

## **Materiel**

The Materiel component of the DOTMLPF-P framework focuses on the equipment needed by military forces to successfully conduct their mission. This component has a strong interrelationship with the other DOTMLPF-P components, which merits its place in the framework. Developments in materiel—for example, technology, materiel science, etc.—can spur changes in doctrine, organization, training and the other components of the framework, leading to broad institutional change. As illustrated in the case of Air Mobile development in the U.S. Army, development in materiel, specifically helicopter technology, spurred changes in doctrine, organization and training.

Arguably, the more common interrelationship dynamic that affects the materiel component is the one where doctrinal evolution shapes the focus and strategy of materiel acquisition in a military institution. This was the case in the interwar era Reichswehr. As a result of changes in doctrinal outlook on warfighting, captured in its paradigm-altering AR 487, the Reichswehr emphasized development and integration of emerging military technology such as tanks, aircraft, artillery and communications technology. Corum wrote "The new technology that came out of the First World War was given a primary place in the new operational doctrine; the relatively large-scale armor operations, that is, tank attacks in regimental strength, were foreseen as being an important part of the new maneuver war."<sup>25</sup>

Through cooperation with its allies—and through improvisation—the Reichswehr was able to build modern equipment despite the Versailles Treaty limitations on equipment and capabilities. In fact, the Versailles Treaty's arms provisions were somewhat advantageous in that they forced Germany to give up World War I equipment that was obsolete by 1920; thus, when the German Army worked on refining its combined arms maneuver doctrine, it was free to improvise and develop ideas that were unhindered by on-hand obsolete capabilities. According to Corum, it could "create the weapons to fit the tactics."<sup>26</sup> To this end, the Reichswehr pursued acquisition ventures with Russia. Corum wrote that, through a special acquisition's directorate in the General Staff (Special Group R, or *Sondergruppe R*), the German Army funded and managed tank and aircraft programs in Russia, operating development and test centers like the one in Kazan.<sup>27</sup>

During the interwar era, the doctrinal outlook on maneuver warfare in the U.S. Army also evolved to ultimately shape materiel acquisition, although it was met with initial apprehension by some Army leaders in the 1920s. Eisenhower's anecdotal account of his and Patton's experience when experimenting with combined arms maneuver is illustrative of the wider institutional apprehension to such change at the time. Eisenhower commanded one of two experimental tank brigades at Fort Meade, Maryland, in the 1920s. Displaying exceptional operational foresight in terms of his outlook on the future of maneuver warfare, Eisenhower believed that tanks had greater potential, in terms of their application in war, than merely supporting dismounted infantry. According to Eisenhower, he and Patton took issue with the existing institutional outlook and doctrine that wedded the development of tanks to the construct of being an infantry support weapon; in their view, this hindered tank improvements in terms of speed and armor. He writes,

“George [Patton] and I and a group of young Officers thought this was wrong. Tanks could have a more valuable and more spectacular role. We believed that they should be speedy, that they should attack by surprise and in mass. By making good use of the terrain in advance, they could break into the enemy's defensive positions, cause confusion, and by taking the enemy front line in reverse, make possible not only an advance by infantry, but envelopments of, or actual breakthroughs in, whole defensive positions. Through a year or more of work, we expanded our theories and refined the tactical ideas. We were constantly experimenting.”<sup>28</sup>

Eisenhower and Patton eventually published the findings of their work in professional journals and were subsequently reprimanded for challenging the Infantry-centric maneuver doctrine of the day, which was endorsed by Major General Charles Farnsworth, who was the Chief of Infantry at the time.<sup>29</sup>

Another great example of how doctrinal change spurred changes in materiel acquisition is visible in the U.S. Army's experience in Vietnam. Specifically, the Army had to adapt doctrine and organization to fight effectively in the coastal littoral areas of Vietnam's Mekong Delta, south of the city then known as Saigon. The U.S. Army's Combat Developments Command developed a concept to address the challenge by adapting an Infantry brigade of the 9th Infantry Division into a riverboat force equipped with naval gunboats to conduct riverine operations.<sup>30</sup>

## **Leadership and Education**

This component of the DOTMLPF-P framework focuses on how the Army educates and develops leaders at all levels. Leadership and education are integral to Army modernization because leaders are responsible for both the daily operation and the long-term transformation of the institution. Pertaining to the latter, the Army expects its senior leaders to provide direction that entails aligning people, systems and resources—and enterprise-level vision—to focus daily activities. In its primer for senior leaders, the U.S. Army War College defines strategic leadership as “the process of aligning people, systems, and resources to achieve a vision for the enterprise while enabling an adaptive and innovative culture necessary to gain an advantage in the competitive environment.”<sup>31</sup>

How leaders are selected, educated and employed carries serious implications for mission attainment and for institutional modernization. This is evident in the interwar era German Army's approaches to leadership and education. In its modernization efforts, the Reichswehr emphasized quality in officer and noncommissioned officer (NCO) education with a particular

focus on technical education. According to James Corum, “The professional army needed . . . to promote technical education within the Officer and NCO Corps.”<sup>32</sup> The German Army increased entry requirements for officers and NCOs and lengthened developmental schooling, making graduation at every level of schooling a strict requirement for retention. According to James Corum, von Seeckt pursued policies aimed at creating “a professional German army that would be manned by long-service soldiers with much higher standards and superior training and led by a highly educated officer corps and general staff.”<sup>33</sup>

Eligible officer candidates had to undergo a four-year training program for commissioning, which entailed roughly 18 months in an operational unit, then a tough entrance examination for a year at the Infantry (maneuver) school followed by a year at their primary branch school and a short period of evaluation for commissioning at their unit of assignment.<sup>34</sup> This policy ensured the accession of only the most highly intelligent and competent individuals into their army officer corps.

Retention policies further reinforced the high quality of the officer corps. To continue serving, officers were required to pass rigorous examinations. Robert Citino wrote about the 1921 Defense District Examinations—structured by the German Army branch—which all German Army officers were required to take as a test of tactical and operational proficiency and combined arms aptitude.<sup>35</sup> This high level of academic aptitude and rigor required that officers subscribe to a culture of professional study at all levels. As James Corum wrote, “During the 1920s and early 1930s, a very strong education ethic was built into the German Army.”<sup>36</sup>

NCO career progression was also highly competitive in the Reichswehr. For example, according to Corum, privates had to take a service exam known as the “NCO Probationer’s Exam” after three years of service to make Lance Corporal; senior NCOs in the comparable U.S. Army grade of Sergeant First Class had to take a service examination for eligibility to make First Sergeant.<sup>37</sup>

Interwar era reforms to leader education in the U.S. Army also highlight its vital importance to modernization and mission effectiveness over time. During his tenure as the Deputy Commandant at the Infantry School at Fort Benning, then Colonel George C. Marshall instituted education reforms that helped the U.S. Army to grow the generation of combat leaders that steered it through World War II.

Marshall’s tenure of reform at the Infantry School is informally known as the Benning Renaissance because he implemented changes to the school curriculum based on a clear-eyed, accurate outlook on the emerging character of war in the decades following the 1920s. He envisioned that future wars would be fast moving wars of maneuver, rife with uncertainty, that would require combat leaders who were adaptive and creative. Consequently, he adapted the school curriculum to induce creativity in officers by introducing uncertainty in the military exercises they had to solve on par with what he had experienced in World War I. He believed in training officers to make timely and effective decisions with little information under uncertain circumstances.<sup>38</sup>

As Chief of Staff, George Marshall took particular interest in managing officer talent to ensure that the Army had the capable leadership it needed to fight and win. According to Benjamin Runkle, Marshall successfully lobbied Congress for an amendment that would permit him to retire many older serving officers, whose intellect and physical fitness he doubted was up to leading combat operations. Following this,

Marshall created a “plucking committee” of six retired officers led by former Army Chief of Staff Malin Craig and tasked them with reviewing the efficiency ratings of older officers. In its first six months, the panel removed 195 captains, majors, lieutenant colonels, and colonels, and over the next five years would designate 500 more colonels for immediate retirement.<sup>39</sup>

## **Personnel**

People are the Army’s greatest strength. Adequate human resources are needed to staff and lead warfighting units and other organizations within an army. This makes the Personnel component a vital element of the DOTMLPF-P framework, which collectively determines how an armed service defines, constructs and operates itself. Basically, the daily operation of a military institution and its long-term modernization cannot happen without good servicemembers and civilian employees in its ranks. This understanding of the personnel element in the DOTMLPF-P framework leads to consideration of the obvious concerns of recruiting, utilizing and retaining people in a competitive job market.

During the interwar era, the Reichswehr faced challenges in recruiting and retaining military personnel. To overcome these challenges, the Reichswehr increased pay and quality of life to retain a quality cadre of officers and NCOs. According to James Corum, “To attract high-quality recruits, military life had to be improved. Pay was increased . . . and the living standards of professional soldiers were dramatically improved.”<sup>40</sup> Much of the improvements in army living standards came in the form of new facilities.

The Reichswehr took an apprenticeship approach to developing and utilizing servicemembers, emphasizing sustained experiential learning and growth by its officers and NCOs. This measure translated to longer assignments that facilitated greater on-the-job professional growth for military personnel. As James Corum wrote, “The German military tradition gave top priority to the thorough training of Soldiers.”<sup>41</sup>

During the interwar era, the U.S. Army faced personnel challenges that were problematic for its leaders to overcome. As the newly appointed Chief of Staff, General Marshall had to deal with the Army’s personnel strength woes to ensure it had the necessary human capital to support both readiness and modernization. He was persistent and disciplined in his efforts as Chief of Staff to prepare the Army for war, which coincided with his assumption of office in September 1939. One of the first things he had to do was obtain the resources to grow the Army’s human resources and equipment. According to Benjamin Runkle, through purposeful meetings with the president and members of congress, in which he persuasively presented the Army’s case for wartime preparation, Marshall was able to get funding appropriated to “raise the authorized Regular Army enlisted strength from 230,000 to 375,000,” with authority granted to the president to call the National Guard into active service.<sup>42</sup> Thanks to Marshall’s ardent efforts in this regard, Congress passed legislation that “raised total War Department appropriations to nearly \$3 billion, thereby allowing the Army to stockpile critical, long-lead items for a force of two million, as well as build an industrial base capable of supplying a total force of four million.”<sup>43</sup>

Quality of life is essential to personnel retention and morale. As Chief of Staff, Marshall also promoted quality of life measures to help improve the lives of Soldiers. For example, he helped create the United Services Organization (USO) for troop recreation support, which today benefits all American servicemembers and their deployed allies.<sup>44</sup>

Changes in military personnel accessions can spur modernization in other areas of a military institution, for example, in training. As part of a series of modernization initiatives in the post-Vietnam Cold War era in the early 1970s, the U.S. Army implemented far-reaching improvements. With the military draft ending after the Vietnam War, the U.S. Army changed to an all-volunteer force. This change in personnel acquisition allowed the service to recruit only people who volunteered and were willing to serve. This development necessitated a change in the Army's approach to training. According to the U.S. Army Training and Doctrine Command, the existing training approach, called the Army Training Program (ATP), which dated back to World War II, was oriented to train mass quantities of draftees or conscripts to produce urgently needed forces for combat.<sup>45</sup> Therefore, when the draft ended, the ATP required adaptation to a training approach that was focused not simply on training mass quantities of Soldiers on tasks within a short time, but rather one that was oriented on training smaller quantities of Soldiers to a higher standard of proficiency.

## **Facilities**

This element of the DOTMLPF-P framework focuses on infrastructure that supports the daily operations and activities of the Army as an institution. Militaries prioritize construction of facilities to support housing, training, education, logistics readiness and daily operations. It is problematic to modernize the Army without adequate facilities to support the latter requirements, which makes the Facilities component critical and deserving of its place in the DOTMLPF-P framework.

In this regard, the Reichswehr's experience is again insightful. During the interwar era, they built facilities supportive of both military operations and production and of capability development programs. The previously mentioned combined-use tank, automotive and weapons development, training and test center in Kazan, Russia, is one such example. Additionally, the Reichswehr improved barracks, dining and recreational facilities. According to Corum, "the army barracks were remodeled and renovated into more comfortable troops' quarters . . . and units would have a full range of recreation and sports facilities, unit libraries and soldiers' clubs."<sup>46</sup>

Prior to declaring war on Japan and Germany in World War II, the U.S. Army took advantage of its training facilities to conduct arguably the largest training event of the time: the 1941 Louisiana Maneuvers. Like most military exercises of its kind, the Louisiana Maneuvers helped to identify areas of needed improvement for the Army, such as motorization, and to highlight the performance attributes and future senior leadership potential of a rising generation of officers. One example of the latter was then Colonel Eisenhower, who was serving as the Chief of Staff of Third Army during the 1941 Louisiana Maneuvers. He writes that his tent became a locus where people would come to confide their concerns.<sup>47</sup> This strong mix of leadership and interpersonal skill would later help Eisenhower to successfully manage the working relationships and complex personalities of his subordinates as the Supreme Allied Commander.

Also insightful is the role of the U.S. Army's facilities in its ongoing efforts to modernize. An excellent example is Yuma Proving Ground, which is the Army's premier test center. This expansive installation has the largest overland artillery range, where the Army does developmental testing of most of its artillery capabilities. As stated on its installation webpage, Yuma Proving Ground "is at the forefront of Army modernization efforts, actively supporting six of the Army Futures Command's cross-functional teams building the future force."<sup>48</sup>

In the contemporary period, since 2020, the Army has been utilizing its superior laboratories in concert with the premier testing facilities at Yuma Proving Ground to conduct a campaign of learning and experimentation named Project Convergence. This is being used to inform the institution's modernization investments. According to Army Futures Command, which spearheads the effort,

Project Convergence is the Joint Force experimenting with speed, range, and decision dominance to achieve overmatch and inform the Joint Warfighting Concept and Joint All Domain Command and Control. A campaign of learning, it leverages a series of joint, multi-domain engagements to integrate artificial intelligence, robotics, and autonomy to improve battlefield situational awareness, connect sensors with shooters, and accelerate the decision-making timeline. Because whoever can see, understand, and act first will win.<sup>49</sup>

The Project Convergence effort is critical not only to the Army's ongoing modernization, but also to the U.S. joint force and its allies. Its success hinges greatly on the institution's development, test and experimentation facilities. This underscores the critical importance of the Facilities element of the DOTMLPF-P framework for progressive transformation.

Another excellent example of the role of facilities in the Army's ongoing modernization are the 23 depots, arsenals and ammunition plants that comprise the Organic Industrial Base (OIB). According to Army Materiel Command, "The OIB manufactures, resets and maintains Army equipment providing critical materiel and sustainment support to warfighters across the Joint Force."<sup>50</sup> The OIB comprises technical facilities and a skilled workforce that help the Army to modernize materiel and to generate operational readiness through maintenance and repair. Among these facilities is Anniston Army Depot, which provides heavy combat vehicle and small arms weaponry expertise.

## **Policy**

Policy provides the authority and institutional mandate to drive Army modernization. Subsequently, policy is employed to evolve and manage the other components of the DOTMLPF-P framework. This role merits a place for policy in the framework and underscores its importance to Army modernization.

Policies can hinder or foster how a military institution perceives and interacts with emerging opportunities for improvement. For example, AR 70-1, *Army Acquisition Policy*, "governs research, development, acquisition, and life cycle management of Army materiel solutions to satisfy approved Army requirements for warfighting capabilities. This regulation takes precedence over other Army regulations with respect to the management of Army acquisition programs."<sup>51</sup>

In the contemporary period, changes in Army acquisition policy have helped the institution to modernize by improving materiel acquisition processes. For example, the 2018 edition of AR 70-1 incorporates acquisition reform initiatives that improve cost efficiency and estimation, readiness, test and evaluation and the integration of science and technology in capability development—and it provides an increased focus on cybersecurity.<sup>52</sup>

Congressionally directed changes in U.S. military policy helped the Army prepare to fight and win World War II. These policy changes took place in great part thanks to the lobbying efforts of the leaders in the U.S. War Department, most notably General Marshall. According to Sean M. Zeigler, Alexandra Evans and co-authors, due to Marshall's persistence, "The United

States implemented new initiatives to develop manpower, mobilize industry, increase defense spending, restore focus on training and readiness exercises, and develop mobilization plans that would ultimately serve as the foundation for the U.S. war effort.”<sup>53</sup>

Marshall also instituted policy changes that reformed the Army bureaucracy to improve senior leader decisionmaking and operations. When Marshall took over as Army Chief of Staff, he observed that the Department’s general staff, which had been created as part of the 1903 reforms under Secretary of the Army Elihu Root, had become inefficient and cumbersome. According to Debi Unger and her co-authors, “Too many officers had direct access to the chief [i.e., the Army Chief of Staff], while heads of autonomous agencies jealously guarded their entrenched privileges. These arrangements entangled the chief and his three deputies in endless details and petty disagreements.”<sup>54</sup> After the Japanese attack on Pearl Harbor, Marshall observed, “It took days to get a paper through the War Department. Everybody had to concur.”<sup>55</sup>

Marshall reassigned a general officer, Joseph McNarney, from London to Washington, DC, to lead a department reorganization committee that was tasked with streamlining the structure and operation of the Army staff and agencies. According to Unger, McNarney reduced the number of individuals with direct access to the Chief of Staff “from sixty to six and three new commands—Army Ground Forces, Army Air Forces, and Army Services Forces—to serve under Generals Lesley McNair, Hap Arnold, and Brehon Somervell, respectively—were created.”<sup>56</sup>

A recent insight on the effects of policy on Army modernization is the U.S. Army opening traditionally male-only combat occupational specialties to women. As a result of this change, the Army is now able to apply talent from the entirety of its human capital to the combat arms, unrestricted by old gender norms. This is an excellent example of how policy changes shape how a military institution perceives and interacts with emerging opportunities for improvement.

## **Conclusion**

In his remarks during AUSA Now, the virtual annual meeting of the Association of the U.S. Army in October 2020, the current Army Chief of Staff General James McConville affirmed that Army modernization must continue: “We must modernize now. It is not about fighting the last fight but better. It is about winning the next fight. To do that, we must transform.”<sup>57</sup> The Army’s modernization efforts will continue as new generations of leaders take the helm of the institution. Based on this understanding, this paper has defined and examined the subject of Army modernization to help succeeding generations of professionals who are entering the Army modernization enterprise to develop a practical framework of understanding to continue ongoing efforts.

The preceding analyses of each element of DOTMLPF-P, complemented with examples of historical reforms, shows how they collectively evolve the Army from the present or traditional to the future. The singular pursuit of progressive transformation in one element or component of DOTMLPF-P to the neglect of the others is ill-advised because it can cause a mission-threatening imbalance. As shown in the above analyses, the elements are all interrelated and complementary; modernization planners must holistically manage their synergy going forward.

Army modernization is the progressive transition of the critical elements by which the institution defines, constructs and operates itself—in short, DOTMLPF-P—from the present or traditional context into the future. These elements constitute the foundational dimensions of the Army and, consistent with the highlighted literature on modernization theory, their progressive transformation modernizes the Army and so enables it to compete, fight and win against any adversary.

## Notes

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- <sup>2</sup> “Military Doctrine,” RAND, accessed 3 January 2022, <http://www.rand.org/topics/military-doctrine.html>.
- <sup>3</sup> Barry R. Posen, *The Sources of Military Doctrine: France, Britain, and Germany Between the World Wars* (Ithaca, NY: Cornell University Press, 1984), 13.
- <sup>4</sup> Posen, *The Sources of Military Doctrine*, 14.
- <sup>5</sup> James S. Corum, “A Comprehensive Approach to Change: Reform in the German Army in the Interwar Period,” in *The Challenge of Change: Military Institutions and New Realities, 1918-1941*, eds. Harold R. Winton and David R. Mets (Lincoln, NE: University of Nebraska Press, 2000), 37.
- <sup>6</sup> Corum, “A Comprehensive Approach to Change.”
- <sup>7</sup> James S. Corum, *The Roots of Blitzkrieg: Hans Von Seeckt and the German Military Reform* (Lawrence, KS: University Press of Kansas, 1992), 38.
- <sup>8</sup> Williamson Murray, “Armored Warfare: The British, French, and German experiences,” in *Military Innovation in the Interwar Period*, ed. Williamson Murray and Allan R. Millet (Cambridge, MA: Cambridge University Press, 1996), 37.
- <sup>9</sup> *Heeresdienstvorschrift 487, Führung und Gefecht der verbundenen Waffen* (Berlin: Verlag Offene Worte, 1921, 1923, 1925), Part 1, 47 as quoted in Corum, *The Roots of Blitzkrieg*, 35.
- <sup>10</sup> Christopher C.S. Cheng, *Air Mobility: The Development of a Doctrine* (Westport, CT: Praeger Publishers, 1994), 96.
- <sup>11</sup> Cheng, *Air Mobility*, 97.
- <sup>12</sup> U.S. Joint Staff, *Joint Capabilities and Integration Development System Manual*, 31 August 2018, Annex F, Appendix G, Enclosure B, B-G-F-2.
- <sup>13</sup> Corum, *The Roots of Blitzkrieg*, 35.
- <sup>14</sup> Corum, *The Roots of Blitzkrieg*, 33.
- <sup>15</sup> Corum, *The Roots of Blitzkrieg*, 45, 47.
- <sup>16</sup> Cheng, *Air Mobility*, 135.
- <sup>17</sup> Williamson Murray, “Contingency and fragility of the German RMA,” as cited in “*The Dynamics of Military Revolution 1300-2050*,” eds. Macgregor Knox and Williamson Murray (Cambridge, MA: Cambridge University Press, 2001), 161.
- <sup>18</sup> U.S. Joint Staff, *Joint Publication 3-0: Joint Operations*, 11 August 2011, II-2.
- <sup>19</sup> Williamson Murray, “Armored Warfare,” 6–49.
- <sup>20</sup> Corum, *The Roots of Blitzkrieg*, 76.
- <sup>21</sup> Robert Michael Citino, *The Path to Blitzkrieg: Doctrine and Training in the German Army, 1920–39* (Boulder, CO: Lynne Rienner Publishers, 1999), 44–45.
- <sup>22</sup> Citino, *The Path to Blitzkrieg*, 44.
- <sup>23</sup> Corum, *The Roots of Blitzkrieg*, 74.
- <sup>24</sup> Citino, *The Path to Blitzkrieg*, 26–27.
- <sup>25</sup> Corum, “A Comprehensive Approach to Change,” 42.
- <sup>26</sup> Corum, *The Roots of Blitzkrieg*, 99.
- <sup>27</sup> Corum, *The Roots of Blitzkrieg*, 98.
- <sup>28</sup> Dwight D. Eisenhower, *At Ease: Stories I Tell to Friends* (New York: Doubleday, 1967), 169.

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- <sup>36</sup> Corum, “A Comprehensive Approach to Change,” 46.
- <sup>37</sup> Corum, *The Roots of Blitzkrieg*, 77.
- <sup>38</sup> Benjamin Runkle, *Generals in the Making: How Marshall, Eisenhower, Patton, and their Peers became the Commanders who won World War II* (Guilford, CT: Stackpole Books, 2019), 164.
- <sup>39</sup> Runkle, *Generals in the Making*, 275.
- <sup>40</sup> Corum, *The Roots of Blitzkrieg*, 70.
- <sup>41</sup> Corum, *The Roots of Blitzkrieg*, 10.
- <sup>42</sup> Runkle, *Generals in the Making*, 270.
- <sup>43</sup> Runkle, *Generals in the Making*, 270.
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- <sup>46</sup> Corum, *The Roots of Blitzkrieg*, 70.
- <sup>47</sup> Eisenhower, *At Ease*, 236.
- <sup>48</sup> Department of the Army, *Yuma Proving Ground*, accessed 3 August 2022, <https://home.army.mil/yuma/index.php>.
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- <sup>52</sup> AR 70-1, i.
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- <sup>55</sup> Forrest C. Pogue, *George C. Marshall: Ordeal and Hope, 1939–1942* (New York: Viking Press, 1966), 293, as quoted in Unger, *George Marshall*, 159.
- <sup>56</sup> Unger, *George Marshall*, 160.
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