



Rock Island Arsenal-Joint Manufacturing and Technology Center foundry employees conduct a test pour to prove out a new pour basin for the M777 howitzer muzzle break, Sept. 13, 2017 at Rock Island Arsenal, Ill. The new muzzle break casting is designed by the University of Iowa. This effort is working to improve muzzle break pours, producing the finest products for the Warfighter. (U.S. Army photo by Debralee Best, RIA-JMTC)

The Insufficient Industrial Base

By Sgt. Maj. Stephen Minyard

U.S. Army Reserve Legal Command

The 2018 *National Defense Strategy* requires the U.S. military to provide a Joint Force capable of dealing with rapid technological advancements, challenges from adversaries in every operating domain across the globe, as well as the impact on our military from armed conflicts that have lasted almost two decades. "We are facing increased global disorder, characterized by decline in the long-standing rules-based international order—creating a security environment more complex and volatile than any we have experienced in recent memory" (Department of Defense, p.1).

The Army's doctrinal role in future conflicts against high-level adversaries is to "conduct prompt and sustained land combat operations across multiple domains" (Department of the Army, 2019, p.3). This includes conventional states like China and Russia. Such a conflict, envisioned in a range of alternate futures studies by the Massachusetts Institute of Technology, would likely see the potential destruction of many major U.S. weapons systems, from armored vehicles and helicopters to carrier battle groups (Biddle & Oelrich, 2016).

Both rival countries, armed with capable conventional

"Combat power may win battles, but sustainment wins wars. Throughout history, when great armies lost, inadequate sustainment was a key factor."

—Lt. Gen. Michael Lundy (2019, para. 13)

forces, arsenals of tactical nuclear weapons, doctrine which supports their direct use against combat formations and the ability to project power against U.S. forces already deployed in China and Russia's periphery, could inflict heavy losses not seen since World War II.

"Russia and especially China are the only countries that could plausibly take over and hold the territory of Washington's allies and partners in the face of U.S. resistance. If they did so—or even if they merely convinced their neighbors that they could and then used that fear to suborn them—they could unravel U.S. alliances and shift in their favor the balances of power in Europe and Asia. If China did so in the Western Pacific, it could dominate the world's largest and most economically dynamic region. If Russia did so, it could fracture NATO and open Eastern Europe to Russian dominance. (Colby, 2019, para. 4)"

Large-Scale Combat Operations (LSCO) against near-peer adversaries rely heavily on a homeland industrial base that can mobilize and quickly replace combat losses. Unfortunately, the current U.S. industrial base has undergone losses in capacity which has left only a few facilities. These facilities are also susceptible to delays and attacks, slowing down the replenishment of weapons and vehicles substantially.

These modern sustainment concerns were brought to attention in 2016 as a panel of Army leaders (general officers directing acquisition, budget, training, and operations) testified before the Senate's Subcommittee on Airland Committee on Armed Services that significant challenges exist for the Army's industrial base ("Army Modernization," 2016).

The Army must develop an asymmetric response to supplement slow sustainment without sole dependence on the industrial base.

The Threat

Both China and Russia have conventional military forces with numbers and power far exceeding any adversary the U.S. has faced in more than a half-century.

Alternate futures studies suggest unified land operations with either country will occur far closer to enemy borders than the U.S. homeland (Farley, 2019). This will cause significant combat losses due to the nature of LSCO as well as the expected use of weapons of mass destruction. Tactical nuclear weapons pose the greatest threat to large ground formations (Thomas-Noone, 2016).

According to the *BBC News*, in China's 2019 military parade, they displayed an array of modern weaponry to include an arsenal of tanks, unmanned systems (drones), and their show piece: the new DF-41 road mobile intercontinental ballistic missile (ICBM), "which Chinese analysts say is able to target any part of the globe" ("In Pictures," 2019, para. 15). As of 2018, China possesses at least 280 nuclear warheads (Jeong-ho, 2018).

In 2018, analysts estimated Russia had between 1,444 to 1,600 nuclear warheads located on ICBMs, submarines, and heavy bombers. Furthermore, Russian doctrine explicitly relies on tactical nuclear weapons as a "key element



U.S. Army Soldiers assigned to Chaos Battery, 4th Battalion, 319th Airborne Field Artillery Regiment, 173rd Airborne Brigade, fire an M777 Howitzer during a live-fire exercise as part of Saber Junction 19 (SJ19) at the 7th Army Training Command's Grafenwoehr Training Area, Germany, Sept. 11, 2019. SJ19 is designed to assess the readiness of the U.S. Army's 173rd Infantry Airborne Brigade to execute land operations in a joint, combined environment and to promote interoperability with allies and partner nations. (U.S. Army photo by Sgt. Thomas Mort)

Understanding Modern Russian War Tactics



Graphic featured in the published article "Understanding modern Russian war-Ubiquitous rocket, artillery to enable battlefield swarming, siege warfare" written by Maj. Amos Fox, in the Fort Sill, *Fires* bulletin, September-October 2017 edition. (Graphic by Rickey L. Paape, Jr., Fires Center of Excellence Public Affairs Office)

of strategic deterrence" (Allport, 2019, para. 6). This means they can use nuclear weapons as a preemptive strike if they feel threatened, rather than as a retaliatory response (Schneider, 2019).

Besides nuclear weapons, both Russia and China also have formidable electronic warfare weapons with the capability to disable the electronics inside large numbers of armor, infantry fighting vehicles, and aircraft (Creery, 2019; Pomerleau, 2019). Also not to be overlooked, Russia has the most current LSCO experience with their combat operations in Ukraine.

According to U.S. Army Maj. Amos Fox, in his paper to the *Institute of Land Warfare* (2019):

"The Russian military threat, while not as dangerous as that of the Red Army during the Cold War, possesses the ability to physically defeat and logistically exhaust the U.S. Army... The fact that Russia has rotated 27 brigades and regiments through the Donbas while the U.S. Army possesses only 31 BCTs must not be overlooked. The Russian military, especially its ground forces and its combat experience, need to be respected. (p. 16)"

As the U.S. engaged in counterinsurgency operations in the Middle East, Russia and China were busy building up their militaries and upgrading their nuclear weapons

stockpile. And they weren't alone. Iran, India, Pakistan, Saudi Arabia, and North Korea are all thought to now have access, or the capability, to produce nuclear weapons (Erlanger, 2019).

The Flaws

In sustained unified land operations against a near-peer adversary, a transformation of industry is needed to increase weapon and vehicle production. Two large problems exist that hinder the industrial base's ability to respond rapidly: reduction in the number of facilities currently producing military hardware, and a reduction in the capacity of U.S. manufacturers to transform in support of conflict.

During World War II, the U.S. military relied heavily on the conversion of its automotive industrial base to produce trucks and armored vehicles. America enjoyed a manufacturing-based economy and was on top of the world in mastery of mass production technologies. "By 1945 the United States had become the world's top industrial producer" ("Mobilizing a Nation for War," n.d., para. 2).

Because of automation and outsourcing to other countries, Joel Kotkin and Michael Shires state in their *Forbes* article (2018), "the share of Americans working in factories has fallen far from the 1950 peak of 30 percent to roughly 8.5 percent last year" (para. 1). Also, over the last 30 years, companies supplying large weapons systems have merged together, reducing available

suppliers, and becoming single points of manufacture. The number of companies able to produce high performance military weapons diminished from 14 in 1981, to just three in 2016 ("U.S. industry perspectives," 2016). Reduced production suppliers, coupled with single-point manufacturing make assembly lines vulnerable to labor disputes, sabotage, cyber-attacks/cyber espionage or even a strategic-level attack — especially with China's new ICBM capabilities (Browne, 2018; Groll, 2018).

According to Lt. Gen. Michael Lundy's 2019 article:

"Without adequate sustainment capability and capacity to sustain our maneuver formations, we are at risk of being unable to close with peer threats or face early culmination if we do. Multicorps large-scale combat operations require tens of thousands of vehicles and hundreds of thousands of Soldiers employed across hundreds of miles. Operations under these conditions require massive amounts of fuel and ammunition, maintenance and medical care in depth, and the ability to reconstitute combat power beyond what our Army can currently provide. Scale matters, and the ability to sustain forces at scale is something only a handful of armies can do. This is not a future theoretical problem; it is a problem our Army faces today." (Lundy, Creed, & Pence, para. 4)

An Asymmetric Response

In a LSCO-centered conflict with a near-peer rival, as combat losses mount and reinforcements are slow to arrive, the U.S. military cannot assume that the needed sustainment will be quick or continuous. To mitigate the lack of industrial base support for sustained land operations, the Army must shift its reliance from a purely conventional force mindset to an asymmetric approach.

Asymmetric warfare is defined by *Merriam-Webster* as "warfare that is between opposing forces which differ greatly in military power and that typically involves the use of unconventional weapons and tactics (such as those associated with guerrilla warfare and terrorist attacks)" ("Asymmetric Warfare," n.d., para. 1)

An example of effective American asymmetric warfare comes from the U.S. Revolutionary War as colonists had to overcome a lack of weaponry and ships and created unorthodox tactics to defeat the numerically superior British forces (Norton, 2017). "During our own revolutionary war, American militia-men engaged in what today is better known as 'asymmetrical warfare.' Ironically, these very tactics are being used against our forces in Afghanistan"

(Wisniewski, 2012, para. 4).

In the future fight, rather than only employing heavy armor, mechanized and light infantry brigades or divisions (which will most likely be targeted by Russian and Chinese weapons of mass destruction), the Army should not forget lessons learned from the last two decades of small-unit unconventional battle — and the U.S. would be wrong to think its adversaries haven't studied those conflicts in-depth, adapting strategies from both sides to their playbook.

To prepare, the U.S. should still train for and utilize several successful asymmetric tactics from the previous conflicts. At a minimum, the U.S. military should re-introduce doctrine for the use of tactical nuclear weapons, and, most importantly, the U.S. should increase its mastery of the cyber and space domains. These are two domains where Russia and China have proven formidable, and could be equal or even superior to the U.S.

According to security and surveillance expert Zak Doffman in *Forbes*:

"Russia and China continue to develop a broad mix of cyber capabilities, they extend and consolidate their economic and military spheres of influence, they exploit the weaknesses inherent in open societies. Even the media plays its part. Again, make no mistake, the media doesn't just report events, the predictability of its response to those events is part of the "enemy's" planning process. China and (especially) Russia know full-well how the western media cycle works, the thirst for the drip-drip of ever new headlines, they factor this into what is done—how it will play, how they will keep it alive, the impact it will have. And that, in turn, links to the clear population interference that takes place through the abuse of social media platforms. Everything is connected." (2019, para. 7)

Conclusion

Preparation for LSCO in the future fight is absolutely important, and in no way should it be ignored, but it also shouldn't be at the expense of 20 years of lessons learned from two recent wars which focused on small unit tactics. Especially when it showed the U.S. what asymmetrical warfare could do to a larger and more conventional force. The U.S. expertly merged asymmetric and conventional tactics in the war that birthed the nation. It should do so again to mitigate the losses to the industrial base. ■

Read "Understanding Modern Russian War" here:
<https://sill-www.army.mil/firesbulletin/archives/2017/sep-oct/additional-articles/Understanding%20modern%20Russian%20war.pdf>

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Sgt. Maj. Stephen Minyard is currently the U.S. Army Reserve Legal Command G3/5/7 sergeant major. He previously served as the command paralegal sergeant major for the U.S. Army Reserve Command and as a military legislative assistant. He holds a master's degree in strategic intelligence and a bachelor's degree in political science.



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