

# Hell On Wheels

■ *By Maj. Christopher Madden*



Ever since Russia and colluding rebels occupied Crimea, the Russians have built an extensive military network along Ukraine's borders. They built bases, staging areas, and military infrastructure, and ultimately, in late 2021, moved in a surge of troops, material, and equipment. Analysts became certain

these actions were not simply another training exercise designed to intimidate when they noted the presence of equipment required for a major military operation, including medical units with surgical capabilities and fuel depots. Nearly all this equipment was moved with the assistance of the Russian military rail network, which is elite in size and capability.

There are myriad reasons the Russian military rail system is superior to that of the U.S. While the U.S. does not need to match the Russians in size and capability, there are lessons to be learned about why Army rail capabilities are still important. This article looks at why Russia values its rail system and the logistical shortfalls it creates. It then examines the current



state of the U.S. Army rail network, the impediments to progress, and a proposed solution. Though it is not currently a high priority, failure to modernize the Army rail lines, fleet, and associated facilities, as well as training, policy, and sustainment structures, may render the mounted force unable to achieve overmatch against near-peer competitors.

Russia's view on national security is different than the U.S. view because the U.S. values the global force projection of its ground forces and the protection of global trade via the Navy. Russia has been invaded over 50 times in its history, and more often than not weather has evicted the invader, not the military. Russians are not ignorant of this fact and

have developed a defensive strategy to keep potential invaders out. The strategy is reaching geographical barriers like the Caspian Sea or the Karakum Desert and forward positioning and slowly moving their army to plug the gaps. Since the fall of the Soviet Union, Russia, under Vladimir Putin, has been fighting to regain this level of security, leading to

conflicts such as the Georgian War and the Cossack Intervention.

The Russian Federation is nearly 6,000 miles in length across mostly impassable lands, which is where the rails come in. Their rail network allows them the flexibility to mass troops and equipment relatively quickly across swaths of land that cannot support paved roads. Ukraine finds itself in between the Russians and the control of one such gap, the area between the Black Sea and the Carpathian Mountains, otherwise known as the Bessarabian Gap.

When the first Russian rail line was built in the 1830s, Tsar Nicholas I deliberately chose the 5-foot track gauge for defensive reasons, knowing it was different than the standard gauge being adopted in most of Europe. Only former Soviet satellite nations and Finland still use the Russian standard. This logistical advantage would later be built upon by Josef Stalin during the interwar period and was critical in facilitating the transfer of Russia's war economy to the eastern region of the country during the early days of Operation Barbarossa in 1941. This logistical framework was so efficient that even unrelenting artillery strikes and aerial bombardment could not slow its movement. It seems Russia built an ideal infrastructure for its strategy of an active defense.

With this in mind, Russia can be forgiven for cultivating a military that is highly effective when fighting on their native soil and using indirect fires to inflict damage on

their adversary's reserves. However, they are not proficient in sustaining a prolonged ground offensive when far from the safety of their railroads without a major logistical culmination. The point of departure from their railhead to the forward line of troops is where the Russian logistical issues begin. Conversely, the U.S. does quite well in maintaining supplies from the operational level to the tactical level but can learn from the Russians' use of their rail system.

In modern times, the U.S. has had the luxury of deploying brigades from within its borders to friendly ports over uncontested waters. However, were this not the case, the U.S. would have difficulty massing its forces globally with speed. A report published in August 2021 from the Government Accountability Office supports this opinion. The report concluded that due to a lack of trained rail crews and an inadequate system of maintaining the serviceability of the Army rails, the U.S. could find itself slow out of the blocks to project its forces abroad in support of a major conflict.

There are more than 120 defense installations and activities in the continental U.S. (CONUS) that require the use of rail to meet their assigned missions. The Army is responsible for 60 of these installations, which contain approximately 1,100 miles of track. These Army installations are linked to 33,000 miles of main railroad track that have been identified as important to national defense and designated as the Strategic Rail

Corridor Network under the DoD's Railroads for National Defense Program. It is common knowledge that rail is the least expensive and quickest way to move equipment and material over long distances over land, and it is estimated close to 70% of the Army's equipment will move by rail. Approximately 1 million tons of material were moved by rail in support of Operation Iraqi Freedom, twice the weight of the Army's 6,300 main battle tanks.

In 2015, an Army analysis of its force structure led decision-makers to institute changes to their rail units. According to Army force developers, there was no requirement for Soldiers to act as rail operating crews, either in CONUS or overseas, during the global war on terror. In a future conflict, to carry the bulk of the load the Army would rely on civilian operators in CONUS and on host-nation contracted operators when they arrived in theater. This would also lead to a 70% reduction in the Army rail force structure, dropping the force from over 600 personnel to the single 180-person 757th Expeditionary Rail Center (ERC).

Army Techniques Publication 4-14, Expeditionary Railway Center Operations, states the ERC's mission is to plan, advise, provide capability assessment, and coordinate operating control for host-nation rail lines for a combatant commander. The ERC also focuses on improving strategic and operational throughput at the port of entry, and on contractor oversight. Despite this, the ERC has

been put to work providing crews to facilitate rail activities as needed in CONUS at an ever-accelerating rate. Thus, as the available population of qualified rail crews has shrunk, the workload has multiplied. While the Soldiers of the 757th ERC assist here at home, they maintain their primary mission of advising overseas. Should there be a large-scale mobilization, these same Soldiers would be required elsewhere.

In 2019, Headquarters, Department of the Army, issued Execute Order 065-19, Total Army Unit Movement Readiness, and tasked the Surface Deployment and Distribution Command (SDDC) with researching the capability of the Army's rail fleet. While the SDDC acknowledged there was a gap between what the Army rail could provide and what would be required in case of mobilization, it failed to quantify the number of rail crews required to sustain 24-hour operations in CONUS.

Arguably, contractors could help fill the void, but that reliance has its own issues. As recently as 2022, rail unions were unable to negotiate their labor contracts with their employers. A strike was averted only by a vote in the House of Representatives to impose a tentative contract deal that was reached in September 2022. The law raised workers' pay by 24% over five years, including an immediate average payout of \$11,000 upon ratification. However, the agreement was approved only by eight of the 12 transportation unions involved in negotiations. The lack of paid sick

leave for railroad employers prevented the remaining four unions, which represented over 100,000 employees, from ratifying the agreement. The negotiations shined a spotlight on the present instability of the railway industry. Thus, it may not be a reliable option for the Army in the event of a mobilization, an issue with which Russia does not have to deal.

Another considerable challenge to the Army rail system is its state of disrepair and the lack of maintenance oversight. Over the past five years the U.S. Army Installation Management Command, which falls under the Army Material Command, has labeled over 550 miles, or nearly 60% of the total Army track available, as red track. Red track is track that failed its ultrasonic inspection and should be closed and repaired as soon as possible. In May 2017, rail inspections at Fort Campbell, Kentucky, revealed sobering safety concerns, prompting inspectors to recommend a certified track inspector conduct a 100% inspection and total replacement of all red track before it is used again. This incident is not unique. Based on inspection findings, it would cost close to \$41 million to correct all known deficiencies, which in the realm of strategic movement is very little. These holistic issues are due to the Army's lack of central oversight of rail repairs and funding.

The U.S. military finds itself at an interesting and familiar time, facing possible large-scale combat in Europe and the Pacific. Decades of asymmetric warfare have degraded the ability of the mounted force

to project in support of large-scale warfare where ports of debarkation and embarkation may be contested. If the Army wishes to be ready for when competition turns to conflict, it must bolster the funding and manpower of its rail fleet and earnestly begin working to repair its rail infrastructure. The number of expeditionary rail units should increase from one to four, and the Army Material Command should stand up a dedicated quality assurance and control section for the Army rail network. It is no coincidence railways have changed the nature of war; they were tailor-made for it with their precision and efficiency. From the Crimean War to the Korean War to Operation Iraqi Freedom, railways have been an integral part of the conduct of war. Indeed, without the rails, industrial large-scale warfare and large-scale carnage would not be possible.

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#### **Featured Image**

**The Fort McCoy Logistics Readiness Center rail operations team moves railcars with an installation locomotive at Fort McCoy, Wisconsin, May 14, 2020. (Photo by Scott T. Sturkol)**