Russia's Military Has a Railroad Problem

Moscow must hope that a refocused war strategy will fix its antiquated logistics.

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A woman walks past a trainload of Ukrainian tanks which are set to leave Crimean peninsular near the Crimean capital Simferopol on March 31, 2014.

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Russia has scaled down its war goals in Ukraine, redeploying its forces to focus on the eastern Donbas

region and the strategic port city of Odesa. A central question now is whether this shift in strategy will help solve the Russian military's many problems with wartime logistics.

Many of these challenges have been well documented, including issues in refueling and resupplying its troops as well as transporting injured soldiers back to neighboring Belarus to receive medical attention. But refocusing on a smaller area may allow Russia to alleviate an underlying logistical problem: Russia's overwhelming dependence on railways—and on trucks beyond the end of those tracks—to move its troops and military equipment.

Roads and railways have for decades been the backbone of Russia's military as well as its commercial supplies. A vast territory, Russia is sparsely and unevenly populated, with most people concentrated in the European part of Russia. Its expansive geography and difficult terrain—featuring steppe, permafrost, and seasonal flooding—mean that the standing army of motorized ground forces relies on its rail and road networks to transport troops, food, and fuel in war and peacetime.

Unlike any other standing army, Russia has an auxiliary service known as the Railway Troops (or "*zheleznodorozhniye voiska*"), which protect and maintain the railway services for use during combat. Their 10 brigades are attached to military districts and work to repair

damaged lines, build or reconstruct bridges, and assist the armed forces in concealment. They can also supply fuel, clothing, and weapons to the front as well as restore road and rail access if they are bombed in combat.

These engineering troops played an important role in Chechnya in the late 1990s, reconstructing transport infrastructure and restoring communication lines as well as constructing parts of the Baikal-Amur Mainline railway in Russia's Far East, which is dually used to transport civilians and military personnel across difficult terrain. As Russia rotates its troops and resupplies the front in the eastern Donbas with battalions from far-flung places, such as Vladivostok and Kamchatka in the Far East, it will be more reliant than ever on these railway lines to transport troops to the front.

But overreliance on the railways for large-scale troop deployment seems to have been one of Russia's main stumbling blocks in this war. Railways link up large urban areas and industrial facilities, but the army's failure to capture important logistical hubs in Ukraine, such as the city of Kharkiv, means they cannot commandeer local railway infrastructure to transport their infrastructure and

soldiers farther into Ukraine and capture more territory. Even in the south where the Russian armed forces made some gains, they do not fully control the railways near Melitopol, where Russian armored trains were deployed from Crimea in early March. They have, however, managed to take control of some small industrial facilities in Kherson and have opened up the rail connection between Kherson and annexed Crimea, which may ameliorate some of their logistical issues in the south.

If it cannot use railways, the army must instead rely on roads. But Russia's forces do not have enough food and fuel supplies to sustain ground offensives to capture Ukrainian territory too far from the railhead. In the north, Russia never managed to control any of the rail hubs in Chernihiv or around Kyiv, Ukraine's capital, and the muddy conditions saw numerous military vehicles becoming stuck. Some vehicles were then apparently abandoned by Russian forces, either because they were unable to fix them mid-battle due to the presence of Ukrainian fighters or were unwilling to tow them many miles back into Russia for repairs.

Many of the tires on Russia's supply trucks appear to have been poorly maintained and rotted, causing rips that have blown out. Evidence from social media indicates this has been the fate of several Russian tanks carrying surface-to-

air missile systems. Videos have surfaced in southern Russia of civilian trucks moving by rail to the front in eastern Ukraine, featuring the now notorious "Z" symbol of Russia's pro-war effort. But papering over the issue with civilian vehicles is a problem, as they have different parts to the one-size-fits-all military vehicles and, in case of breakdowns, are challenging to repair.

The Ukrainians recognized this vulnerability and targeted Russia's truck convoys carrying food and fuel. The railway line between Ukrainian Railways and Russian Railways was also an early casualty of the war—the Ukrainian military, aware of the Russian military's reliance on the network, destroyed it in late February. Russia's supply lines are already stretched thin, with anecdotal evidence that Russian soldiers are running out of food and requesting them (or looting) from locals. In the eastern Donbas, unless Russia can control these railway and logistical hubs near the strategic Ukrainian port of Mariupol, they will be obliged to continue the war on difficult off-road terrain, which damages their vehicles.

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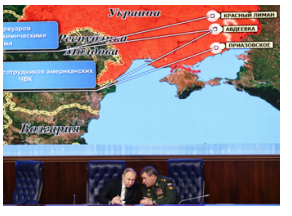

Russian President

Vladimir Putin listens to Chief of the General Staff of the Russian Armed Forces Valery Gerasimov as they sit in front of a huge screen showing the map of Ukraine during the annual meeting of the Defence Ministry board in Moscow on Dec. 21, 2021.

Is Ukraine's Endgame a Russian Land Bridge?

That may depend on how much coastal territory Moscow wants—and whether it can hold it.

These logistical problems may also portend future political casualties. One of the most important figures in the army logistics world is Gen. Dmitry Bulgakov, who served from 2008 to 2010 as chief of staff of army logistics. Under his leadership, there were numerous allegations of misconduct, including the mishandling of ration supplies and issues in organizing reasonable accommodations for soldiers, but Bulgakov was nevertheless promoted to deputy defense minister. The United States sanctioned him in March over his role in the Ukraine war, a sign of his political significance.

But claims that Russian soldiers fighting in Ukraine have been given rations seven years out of date are likely a

continuation of the widespread problems that Bulgakov oversaw. This and other issues around the maintenance of army equipment points to a systemic issue within the Russian ministry of defense, over which Bulgakov may eventually be accountable for when the war is over.

Belarus is playing a central role in Russia's logistics planning—and its logistics problems. Much of the discussion regarding Belarus has centered around whether its forces will actively join the war, but Russia's military is already using Belarus's rail network.

Belarus's railways use the same 1,520 millimeter (or 5 foot) Soviet gauge system as Russia's, and its army has been reliant on the system to resupply the front line as well as transport injured and killed soldiers back to Russia. But there are reports that civilian Belarusian railway operators have sabotaged the lines by deactivating or destroying train signaling systems. The Telegram channel that published the footage about the sabotage was declared an "extremist group" by Belarus's Ministry of Internal Affairs in March. The Belarusian security services (still known by the acronym KGB) have been detaining those who participate in this sabotage and introduced military patrols of the road and rail network, indicating that this is viewed as a serious threat.

The group has reported cyberattacks on the Belarusian Railway and targeted disruptions to signaling that, if

damaged, only allows individual trains to pass through that section of railway at a set speed of 15 to 20 kilometers (or 9 to 12 miles) an hour, greatly slowing down Russia's ability to transport troops, supplies, and ammunition. The head of Ukrainian Railways, Alexander Kamyshin, alluded to the group's activities, maintaining that there was no longer a rail connection between Belarus and Ukraine, likely due to Belarus's sabotage activities.

An auxiliary force of Belarusian soldiers could help plug some of Russia's logistical gaps. Although many are not combat-ready, its soldiers could be used in a noncombat role: ferrying supplies, repairing vehicles, or guarding convoys, which could assist Russia in its reorientated plan to take and hold swaths of the Donbas. Belarus's entry into the war as an active aggressor—rather than as a facilitator—would naturally have political consequences, including further international sanctions, and would prove unpopular in Belarus.

As some of the fighting moves to Odesa, with the potential for Russia to open up a land corridor beside the Black Sea, Russia's already stretched supply lines may be worn even thinner. But Russia does have some supportive rail networks nearby. As early as 2017, Russia constructed a new high-speed railway line from central Russia to the Black Sea—it does not cross Ukrainian territory—that was used to

consolidate Russia's military presence in the separatist territories it controlled in eastern Ukraine.

If Russia is able to control the railhead at Odesa, this would reduce the pressure on trucks to provide the bulk of the logistics. Given fresh troops and greater resources deployed to a smaller area, Russia's logistical problems may not prove decisive in the course of the war.