

History of World War II: How Much Did the Weather Contribute to the Wehrmacht's Defeat? The Nazi-Soviet War

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A sometimes overlooked factor which influenced the Nazi-Soviet War is the effects of the weather, chiefly the rain, ice and snow, the type of conditions for which the Russian or Soviet climate was famous for.

It must be mentioned, however, that the adverse climatic situation had started to impact on the Nazi-led invasion in October 1941, four months into the attack, when Adolf Hitler's forces had by then expected to be victorious, but instead were pressed for time. The weather only became an issue because the invasion had not gone as planned.

Why were the Germans pressed for time? In the main because of the strategic blunders, committed by the German high command and Hitler; between the dates of 22 June 1941 when the invasion was launched across an enormously broad front, which ultimately weakened the force of the blow; and on 21 August 1941, when Hitler postponed the advance on the all important Moscow for a month and a half, sending his divisions to the north (Leningrad) and south (the Ukraine) in what proved a critical mistake.



Taking these causes into account, the suggestion is inaccurate that either heavy rainfall, or freezing cold, were primarily responsible for Operation Barbarossa's failure. Before analysing German misfortune regarding the weather, it can be noted that Hitler initially got lucky with what he believed, to the end, was the late start of his invasion.

Barbarossa had been scheduled to commence on 15 May 1941, but this was too early for an attack on Russia to proceed (Goodspeed, *The German Wars*, p. 390). Having not been informed of the relevant weather reports, Hitler was unaware that the spring of 1941 was exceptionally wet in the western USSR, including the eastern half of Poland, which the USSR occupied as part of the 1939 Nazi-Soviet Pact.

Many of the Polish-Russian river valleys were still flooded in late May and early June 1941, such as the strategically placed Bug river, which flows for almost 500 miles across Poland, western Ukraine and south-western Belarus. Barbarossa, therefore, could not have been successfully executed until weeks after 1 June 1941.

Due to the April 1941 Wehrmacht offensives in Yugoslavia and Greece, the attack on the Soviet Union was delayed for 5 and a half weeks (38 days). It has been claimed down the years that this hold up was fatal to German plans, an attractive idea, but something quite different is the case. Military historian Donald J. Goodspeed observed "since the initial thrust had to go rapidly to yield the best results, Hitler probably gained more than he lost by the postponement".

This was because the ground in the western Soviet Union had dried out by 22 June 1941. There were no overflowing rivers or flooded fields in sight. The hard, flat surfaces were suitable for the panzer formations to advance relatively unhindered, at 30 miles per hour,

inflicting terrible damage on the Soviet military. German Army Group Centre reached the Belarusian capital of Minsk, on just day 6 of the invasion. In the weeks to come the strategic errors and, to a lesser extent, growing Soviet resistance, the vast terrain and poor weather would lead to the slowing of the German advance.

Overall, the Red Army's performance in 1941 and into 1942 was decidedly inept, many of its divisions suffering from poor morale and training. This was not the typical Soviet soldier's fault. The culpability lay mainly with Joseph Stalin, for decimating the Red Army high command of experienced officers with his purges. British scholar Evan Mawdsley [noted](#), "Many Soviet soldiers fought badly in 1941 or surrendered without a fight, demoralized troops in a demoralized society".

There was some fierce Red Army resistance on display from June 1941, but this was not a widespread occurrence along the front, and should be put into perspective. The statistics on casualties demonstrate that the Nazi-Soviet War was one-sided in its opening months. By the end of September 1941, according to Mawdsley the Germans had inflicted 2,050,000 personnel losses on the Red Army, while the invaders by then had [suffered](#) 185,000 losses (a ratio of 11:1 in favour of the Germans). The casualty figures for the remainder of 1941, and for the first 6 months of 1942, continued to heavily favour the Wehrmacht, hovering at a ratio of between 7:1 and 8:1.

In the closing weeks of 1941, the Russian rains and debilitating winter can be regarded as secondary factors in Barbarossa's demise. Yet, as stated, the inclement weather still contributed to the Wehrmacht's failure in toppling the USSR. Marshal Georgy Zhukov, Stalin's top wartime commander, [wrote](#) in his memoirs,

"For the benefit of those who are inclined to hide behind the mud, as the real reason for the Germans' defeat near Moscow, I would like to add that the period of slush in October 1941 was comparatively short. Cold weather set in and snow fell in early November, making the terrain and roads passable everywhere".

Zhukov's viewpoint is accurate relating to the mud; though he does not mention quite how severe the winter of 1941-42 was, a subject which will be discussed further on here. The winter that was to come shortened what the Russians call the Rasputitsa, when the rains turn poor quality roads, pathways and fields into rivers of mud. Zhukov reminisced how the mud stuck to everything, from human feet "to the wheels of the barrows" and "the blades of the spades".

Meanwhile, on the opposing side to Zhukov was the Austrian-born SS lieutenant Otto Skorzeny. Like Zhukov, Skorzeny was located on the frontline in 1941. Skorzeny wrote in his memoirs that rainfall did not arrive near Moscow until "October 19" when "torrential rain fell on the area of Army Group Center, which in three days literally sank into the morass". Hitler had already said in August 1941 that the "autumn rain season of the Moscow region begins about mid-October".

The autumn Rasputitsa lasted for 3 weeks, until 10 November 1941. Even before 10 November the mud was solidifying, with the temperature dropping considerably in the first days of November. The colder conditions were at first welcomed by German soldiers, who had no idea of the winter that lay in store. Skorzeny wrote, "We thought: long live the cold! It froze during the night of November 6 and 7. Slowly the supplies began to flow again. We

received ammunition, fuel, some food and cigarettes. Finally the wounded could be evacuated, and preparations were made for the final offensive”.

With the Rasputitsa at its worst during the second half of October 1941, there is no doubt it had a very serious impact on the German invasion. The following August of 1942, on the 9th of that month, Hitler insisted, “Had it not been for the rain and mud last October, we should have been in Moscow in no time. We have now learnt that the moment the rain comes, we must stop everything”.

Eminent climatologists Hermann Flohn and Jehuda Neumann, in a co-authored study on how the weather impacted the Nazi-Soviet War, recognised that “At the time of WWII, there were very few paved roads in the USSR. Rains and low evaporation rates of the fall season would turn unhardened roads and fields into quagmires, in which many of the tanks, pieces of heavy artillery, and other mechanized transports would dig their own graves by trying to move on”.

The respite gave the Soviets time to strengthen their rearguard. In the first fortnight of November 1941, the Kremlin [dispatched](#) 21 fresh divisions from Siberia and Central Asia to the Moscow front, the sort of reserves which the Germans did not have.

The Rasputitsa also impinged on Soviet divisions but, altogether, the inhospitable surfaces had a more negative outcome for the attackers which was inevitable. Fighting a war based largely on defence in the early 1940s, the Red Army was less reliant on mobility than the Germans. Russian tanks, like the T-34, had wider tracks than the panzers and they moved more efficiently across the soggy soil. Supplies and logistics were not as great an issue for the Russians, who had a working railway system directly behind them, while the German lines were increasingly stretched.

In the first half of October 1941, the Germans had almost annihilated the defences in front of Moscow, destroying 86 Soviet divisions around the Russian towns of Vyazma and Bryansk, both about 130 miles from the capital. When the rain clouds arrived on 19 October, Army Group Centre on that day captured Mozhaisk, just 65 miles west of Moscow. It is little wonder that Zhukov considered the dates, from the 10th to the 20th of October 1941, as the most [dangerous](#) time for the Red Army in the war.

The Red Army’s resistance was at a low ebb by mid-October. With the town of Mozhaisk under German control, the road to Moscow lay open. Skorzeny believed at this period, “We were convinced that we would be in Moscow at the beginning of November”.

The earlier strategic errors, committed by the Nazi hierarchy, now caught up with them. Frontline commanders were aware that rainfall was coming. One Wehrmacht general [recalled](#) how “the reality far exceeded our worst expectations”; but he remembered too that the rains began “slowly enough in mid-October” and “became steadily more intense”. The rainfall’s slow start partially enabled the German 6th Army to take the Ukrainian metropolis of Kharkov, the USSR’s 4th largest city, on 24 October 1941. Forty-five miles north of Kharkov, the Germans also captured on 24 October Belgorod, a medieval Russian city.

The Wehrmacht victories then began to dry up, with the German approach halted by the mud as the climatologists, Flohn and Neumann, have highlighted. In early November with the mud hardening, the Germans were able to sort out their transportation lines. The

advance on Moscow did not resume in full flow until 15 November 1941. By then it was too late. Hindsight is always useful but with the biting cold and snow emerging, the German offensive should not have recommenced at all in 1941. On the night of 11 November, the temperature dropped suddenly to minus 20 degrees Celsius.

Flohn and Neumann have [outlined](#) in their paper that the Russian winter of 1941-42 “turned out to be one of the most severe winters on record” and “there is no comparison between German and Russian winters; even a ‘normal’ Russian winter would be considered a very cold winter in Germany”.

A table produced in the Flohn-Neumann study provides the figures regarding winter temperatures in Moscow, for example, compared to other winters in the capital. Temperature recordings in Moscow, for November 1941, show that month was on average 6.8 degrees Celsius colder when compared to November 1940. December 1941 in Moscow was, on average, 5.2 degrees Celsius colder in comparison to December 1940. January 1942 was 6 degrees colder than January 1941, February 1942 was 1.2 degrees colder than February 1941, and March 1942 was 3.4 degrees colder than March 1941.

It is also worth comparing the winters of 1941-42 to 1939-40, in order to provide a broader picture. November 1941 in Moscow was on average 4.7 degrees Celsius colder than November 1939. December 1941 was 5.4 degrees colder than December 1939. January 1942 was 0.8 degrees colder than January 1940. February 1942 had the exact same average temperature as February 1940, and March 1942 was 4.5 degrees colder than March 1940.

The winter of 1939-40 was somewhat colder than 1940-41, but still nowhere as severe as 1941-42, when the war was raging beside Moscow. The average temperature in Moscow for November 1941, which takes into account both day time and night time recordings, was minus 5.3 degrees Celsius. December 1941 showed an average temperature of minus 12.8 degrees.

In January 1942, it dropped again to minus 20.2 degrees Celsius in Moscow. February 1942 showed a recording of minus 11.8 degrees. Even March 1942 had a well below zero reading, with an average temperature of minus 9.7 degrees. This winter was extraordinarily brutal and nor were the above temperatures limited to the Moscow region. Similar figures were posted at Leningrad, over 400 miles from Moscow. By 20 February 1942 the Germans had [suffered](#) 112,627 cases of frostbite.

Hitler, who at length was examining meteorological studies and forecasts at the Wolf's Lair, continually declared the winter of 1941-42 to be “the worst in 150 years, and had come on four weeks earlier than expected”. This was perhaps only a slight exaggeration, and the Flohn-Neumann paper would add weight to Hitler's argument. Nevertheless, Hitler, like Napoleon before him, was exploiting the weather as the chief reason for the inability to conquer Russia. The weather conditions, as mentioned earlier, were a secondary factor in Barbarossa's derailing.

A significant part of the Ukrainian population, in the centre and west of the country, greeted the Wehrmacht and SS soldiers as “liberators” in the summer of 1941. This was particularly so in western Ukrainian cities like Lvov (Lviv) – where many of its citizens warmly welcomed the fascist forces from 30 June 1941, as the gold and blue Ukrainian flag [flew](#) beside the Nazi Swastika. Lvov's Jewish community, aware of the racist roots of Nazism, remained

fearfully at home.

For the German soldiers, when night came the pain was really felt. Late on 4 December 1941, the thermometer near Moscow sank to minus 31 degrees Celsius. The following night, it dropped again to minus 36 degrees. Flohn and Neumann wrote that these temperatures “gravely hit the German armies that were not appropriately clothed, and which were not equipped with armaments, tanks and motorized vehicles that could properly function even in a ‘normal’ winter in the northern parts of the USSR, let alone a winter as rigorous as that of 1941-42”.

Similar to the Rasputitsa, the Soviets did not suffer as much as the invaders during the cold. They had much greater quantities of warm clothing, anti-freeze for their tanks and lubricants for their guns, etc. They were closer to home and used to fighting in the winter, having experienced such a conflict in Finland just 2 years before (the Winter War). Night time temperatures would sink lower still in the coldest month of all, January 1942.

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