

# The History of the Twentieth Century

## Episode 396

### “The Battle of Kursk”

#### Transcript

[music: Fanfare]

Germany’s 1943 offensive had failed. Then the Red Army began their own offensive, which became the biggest tank battle in history.

Welcome to *The History of the Twentieth Century*.

[music: Opening War Theme]

Episode 396. The Battle of Kursk.

We return to the Eastern Front today, and let’s begin with a brief review. Stalingrad fell in early February. The losses left the German front line weak in the south. The Red Army advanced in February, retaking the key Soviet cities of Kharkov and Kursk, but a German counterattack in March retook the city of Kharkov. The spring season of mud, the *rasputitsa*, then forced both armies to halt.

The Red Army still held the city of Kursk, which now lay inside a Red Army salient that extended west. After the heavy losses of the past two years, the German Army was now seriously under strength, but Hitler firmly believed in the importance of a 1943 offensive in which Germany could reclaim the initiative in the East. It was called Operation Citadel, and its goal was to attack the neck of Kursk salient from both sides with forces that would meet somewhere to the east of Kursk, surrounding and destroying the large Soviet forces inside the salient and recapturing the city. This would both weaken the Red Army, denying it the opportunity to begin its own offensive, while also collecting hundreds of thousands of Soviet POWs, who could be sent to Germany as badly needed slave labor to keep the arms factories working.

The biggest problem with this plan was its predictability. Anyone looking at a map could see that the Soviet salient around Kursk was the most obvious target for a German offensive. A key ingredient to a successful offensive is surprise, and the location of this offensive would be no surprise.

Even if it is obvious where your offensive will take place, it is still possible to surprise your enemy with when you begin your offensive. But in the case of Operation Citadel, the offensive did not come as a surprise. Hitler kept delaying it. The delays only gave the Soviet side more time to prepare. The Red Army had its own plan for a 1943 offensive, also in the region around Kursk, codenamed Operation Kutuzov, after the 19<sup>th</sup>-century commander who successfully defended Russia from Napoleon's invasion of 1812.

So the Red Army waited, they built multiple defensive lines, as many as eight in some places, and prepared to wear down any German attack. On the German side, the senior command was well aware of these preparations and urged Hitler either to get his offensive started or to cancel it. He did neither.

The German offensive began at last on July 5. The Kursk salient lay along the boundary between Army Group Center and Army Group South. On the north side of the salient, Army Group Center's Ninth Army, commanded by Walter Model, attacked south. On the south side of the salient, Army Group South's Fourth Panzer Army, commanded by Hermann Hoth, veteran of the Battle of Stalingrad, attacked north.

On the morning of July 10, five days into Operation Citadel, the news came that the British and Americans had landed in Sicily. Two days later, on July 12, the Red Army began its Operation Kutuzov. The main thrust of this attack began north of the Kursk salient and behind Model's Ninth Army. The Ninth Army would have to give up its gains from Operation Citadel and pull back or else risk being surrounded themselves.

Operation Citadel ended not with a bang, but with a whimper. Operation Kutuzov, on the other hand, was just getting started. You see, the German line had a salient of its own, around the city of Orel. This salient was just to the north of the Red Army's Kursk salient: imagine a fat red arrowhead pointing west, and then sitting on top of it a black arrowhead pointing east, and that will give you a rough idea of the state of the front line. When the Ninth Army attacked the Kursk salient, it was southward from the Orel salient.

The goal of Operation Kutuzov was to attack this German salient on its northern side, break through the German line at the neck of the salient and surround the German forces inside. The challenge for Operation Kutuzov was that part of the line was held by one of the best German units, the Second Panzer Army.

The Soviet attack was led by the 11<sup>th</sup> Guards Army. This was also an experienced, veteran force, as you can tell from the designation *Guards*. It was supported by two Soviet tank corps.

I'm going to ask for your indulgence for a few moments, as I delve even deeper into the nitty-gritty of tanks and tank production in 1943. Because you are listening to *The History of the Twentieth Century* podcast, which means there are all kinds of rabbit holes we might go down.

All the way back in episode 57, I talked about the emergence of the automobile. Some of the first automobiles and the first automobile manufacturers appeared in Germany in the latter years of the 19<sup>th</sup> century. These early automobiles were manufactured one at a time. They were virtually bespoke motorcars. There would be a designated spot on the factory floor, where workers would gather, bringing along whatever tools and materials they needed, and build a car from the floor up, beginning with the wheels and axles.

As you can imagine, this was a slow and expensive process. In 1899, the company founded by Karl Benz (that's as in Mercedes Benz) was the largest automobile manufacturer in Germany. That year, the company employed 430 workers and produced 572 cars, which works out to somewhere around 2,000 worker hours per vehicle. That made these cars luxury items, which sold for prices well above \$100,000 in today's currency.

I described in episode 57 how in the United States, first Ransom Olds, and then Henry Ford, adapted American ideas of interchangeable parts and assembly lines to produce cars in much larger numbers more quickly and at a much lower cost. Henry Ford could build Model T cars at something like five worker hours per vehicle, and charge a price around \$10,000 in today's money.

As you likely know, the cars on an assembly line advance forward from station to station, and at each station, the workers perform the same job over and over again, and the cars gradually come together until they emerge as finished products at the end of the line.

That was the American way. The German way, the European way, was to employ skilled workers who in many cases, hand-made the individual parts for each car. Europe has a long tradition of skilled specialist workers that stretches back to the medieval guilds. America had no such tradition; assembly line workers don't need to be highly skilled. They only need to know how to use tools to assemble pre-made parts.

You're wondering what this has to do with the Second World War. Back in episode 375, I told you that in the year 1942, Germany was manufacturing about 500 tanks every month, while the Soviet Union was building 2,200. This was in spite of the fact that Soviet GDP was only about half of Germany's at the time. How was this possible?

First, you should note that Germany had to devote a larger share of its wartime production to other needs, like U-boats, or aircraft and guns to defend against the British bombing campaign. But apart from that, German factories were building tanks the same way Karl Benz was building cars a half-century earlier: by building the machines one at a time from the floor up.

When the United States went to war, it had no dedicated tank factory. Most US tanks were built in factories converted from the production of automobiles or trucks or railway cars. There were no automobiles produced in the United States from 1942 to 1945; all the car companies were building military vehicles. America's main battle tank was the M4, known as the Sherman tank.

The Sherman tank was designed from the start to be simple and easy to build on an assembly line.

There are advantages to this production method, beyond the obvious one, that you can build the tanks faster on an assembly line. One is that once the design is properly refined, the assembly line is consistently putting out a reliable machine. Having large numbers of the same machine simplifies training. Tank crews don't have to relearn their skills when they move from one vehicle to another. And the same characteristics that make a tank suitable for assembly line construction, such as fewer parts and easy assembly, also make it easier to service and repair in the field. It's easier to supply and stockpile parts in the field for one type of tank than it would be for many types of tanks.

The key drawback to assembly line manufacture is that the line has to be set up for one particular design. Once everything is in place on the line, a change in the design of the tank would require retooling the assembly line.

In contrast, an advantage to the German manufacturing system is the ability to change quickly from one design to another. Once today's tank is finished and out the door, the next tank could be the same, or similar, or entirely different. No retooling needed.

The German Army certainly appreciated this flexibility. They were constantly coming to the manufacturers and requesting small changes in the design in response to problems that emerged in the field. Because of this, the Germans fielded a wider variety of tanks and each model came in a bewildering number of variants.

The main German battle tank at the beginning of the war was the Panzer III. Later came the Panzer IV, and after the invasion of the Soviet Union, when the German Army discovered that the Red Army was fielding the surprisingly durable T-34 medium tank, the Germans introduced the Panzer V, better known as the Panther.

Having a wider variety of tanks at one's disposal has some advantages, but it comes with one big disadvantage: more models of tanks in the field require much larger stockpiles of spare parts for the various machines. This can strain your supply lines, and running out of one crucial part in the middle of a battle could put dozens of otherwise combat-ready tanks out of action until new parts arrive. German repair crews were often forced to cannibalize parts from one tank to get other tanks operational.

Are you ready for some numbers? The United States was able to build a Sherman tank at the cost of about 10,000 worker hours. German tanks required twenty times the labor: over 200,000 worker hours per tank. It required more than 300,000 worker hours to build a Panther.

Germany built more Panzer IVs than any other tank during the war, about 8,500 in all. German manufacturers also turned out about 6,000 Panzer IIIs and about the same number of Panthers. That comes to a total of about 20,000 medium battle tanks.

The United States produced 70,000 Sherman tanks, three and a half times as many.

Compared to other tanks in the field at the time, the Sherman tank was pretty good when it was first introduced into combat in North Africa in 1943. By the end of the war, not so much, but what American tanks lacked in quality they easily made up for in quantity. It doesn't matter so much if your side is losing tanks at a faster rate than your enemy is losing theirs, if you can replace your losses and they can't.

All right, but how does the Soviet Union figure into this picture? Soviet tank production methods much more closely resembled American assembly line methods than they did the German approach. And there's a very good reason for that. Think back to our episodes in the Thirties, when I talked about the Soviet Five-Year Plans. Stalin and his government were keen on industrializing the Soviet Union, and when they needed help in building factories and learning production methods, they turned to the United States.

The USSR was close to an autarky, a self-contained economy. As such, it was largely immune to the Great Depression. The economic collapse in the United States in the early Thirties was a boon to the Soviets. American industrial architects could be hired on the cheap to design factory buildings, American industrial engineers to design assembly lines. American machine tools and generators and all manner of industrial equipment were just sitting in American warehouses collecting dust until the Soviets came along and started bidding on them.

So the USSR's new factories operated along American lines. For example, I've already mentioned the Dzerzhinsky Tractor Works in Stalingrad. This plant actually predates the Great Depression. Its construction began in 1926. The building was designed by Albert Kahn Associates, the same firm that designed factories for Ford and General Motors in the US. In 1929, the firm opened an office in Moscow, where it trained Soviet architects and engineers in the design and construction of industrial buildings. The steel beams used in the structure were manufactured in New York. The first tractors manufactured at the facility were based on the American model 15-30 tractor manufactured in the US by McCormick-Deering, today known as International Harvester.

The Dzerzhinsky Tractor Works was operating at full capacity by 1932, turning out 144 tractors every day, as part of the Soviet government's program to mechanize and modernize Soviet agriculture, but they also started building tanks at the plant within a year. When Germany invaded, the plant was fully converted to war production, most notably the Soviet T-34 tank.

Let's talk about the T-34 for a minute. The Americans were producing Sherman tanks with 10,000 worker hours per vehicle. The Soviets couldn't match that figure, but they were building

T-34s for something like 40,000 worker hours each, which was still only about one-fifth of the labor the Germans needed to build a Panzer IV.

By the way, Soviet tanks like the T-34 were widely thought to be shoddy, with poor workmanship. These qualities can be explained by the need to field as many tanks as possible as quickly as possible, and some of the shoddiness was pre-planned. The Red Army figured the average life expectancy of a T-34 was six months. The average life expectancy of a T-34 entering combat was measured in hours. With statistics like that, it becomes obvious why you wouldn't bother building your tanks from high-quality components. Why would you include a transmission rated for a five-year life expectancy into a six-month tank?

So no, Soviet tanks did not match German or American tanks in quality, because there was no reason they should and good reasons why they shouldn't. The assembly lines that cranked out these tanks, on the other hand, were very good indeed.

[music: Anvil Chorus.]

Adolf Hitler couldn't believe that the Soviets were producing tanks at quadruple Germany's rate, but you should be able to believe it. Even at quadruple Germany's rate, they were using fewer workers to build them all than the Germans needed to build theirs.

When the Panther was introduced, the disparity became even greater, because Panthers required even more labor to build. The Panther, as you know, was introduced as the new German medium tank, along with the Tiger, a new heavy tank. The Germans incorporated the lessons taken from the T-34 into their new tanks, mainly that the T-34 had thicker armor, which was sloped in front to diminish the impact of an enemy shell, and wider tracks, which made it more mobile in conditions of mud or snow, which are often encountered in Russia.

Originally, the Panther was supposed to be 30 tons and the Tiger 50 tons, which are reasonable numbers for a medium or heavy tank, but demands from the Wehrmacht command, and from Hitler, for more armor and more powerful guns upscaled both tanks. The Tiger ultimately came in at 57 tons, and the Panther at 48. In other words, the new medium tank was about the size you'd expect in a heavy tank. Both tanks used the same engine, which meant the Panther had a high power-to-weight ratio and was surprisingly nimble for its size. Overall, it nicely balanced armor, maneuverability, and firepower, the three most important characteristics of a tank.

At least on paper. In practice, they were complex and expensive vehicles rushed into combat before all the bugs had been worked out. Panther engines had an annoying tendency to break down, even catch fire. In the 1943 tank battles around Kursk, the Germans lost as many Panthers to breakdowns as to enemy action.

They were certainly effective in combat, when they worked. A Panther's gun could destroy a Soviet T-34 from a distance of two kilometers, while a T-34 could only damage a Panther at

short range, and a T-34 could not penetrate the armor on the front of a Tiger tank at all. The only option a T-34 tank crew had against a Tiger was to try to maneuver until they could shoot at the side of the enemy tank, and even then, it had to be at virtually point blank range. Needless to say, this gave the Tiger plenty of opportunity to shoot first.

The Soviets did make incremental improvements in the T-34 between 1941 and 1943, but only incremental changes; nothing to match the Tiger or the Panther. Assembly line manufacturing creates incentives to keep design changes minimal, to avoid expensive and time-consuming retooling. The bottom line is that the T-34 was the best tank on the battlefield in 1941; by 1943 it was seriously outclassed by the latest German models. When you consider these facts, you begin to understand Hitler's desire to delay the start of the 1943 German offensive for the sake of getting more of these monster tanks onto the battlefield.

But any historian will tell you the delay was a serious mistake. Why? First, as we've seen, the delay sacrificed the crucial element of surprise. Even beyond that, the Soviet position isn't as bleak as it seems at first glance. The Soviets still held the big advantage inherent in assembly line manufacture and that is numbers. Like the Americans with their Sherman tank, the Soviets were willing to accept a tank of lesser quality if it meant overwhelming quantity. The Red Army went into these battles with around double the number of tanks the Germans had available. And as impressive as the new tanks were, less than 10% of the German tanks in the field were Panthers or Tigers. The rest were the same old Panzer IIIs and IVs.

Since a Panther could knock out a T-34 at a range of more than a kilometer, while a T-34 had no hope of doing the same to a Panther unless it was very close and did some fancy maneuvering, Soviet tank units fighting at Kursk had but one practical tactic: to rush the enemy with numbers and hope enough tanks survived to get in close and begin scoring hits.

This is the armored equivalent of the mass infantry charge so beloved of 19<sup>th</sup>-century generals. The principle of those mass infantry charges in the days of more primitive firearms was that the enemy would only be able to pick off a fraction of the advancing soldiers; the rest would survive to get in close and overwhelm the enemy with numbers.

In the twentieth century, modern weapons turned infantry charges into futile exercises in mass slaughter, but in 1943, mass tank charges could still work, and this was the approach the Red Army took. At Kursk, tank crews were ordered to rush the enemy, get in as close as possible and try to get alongside a German tank and take a shot at its more vulnerable side armor.

This seemed such a departure from normal armor tactics that the Soviet tank crews joked that they were going to come alongside the Germans and board their tanks, the way pirates of old might board another ship at sea.

No one actually did such a thing during Operation Kutuzov, as far as I know. There are stories of Soviet tanks simply ramming their adversaries. I'm not aware of any conclusive evidence this

actually happened, but I wouldn't be surprised if it did once or twice. Given the disparity in numbers, a tank for a tank in even trade would have been a bargain for the Russians.

The full weight of the Operation Kutuzov offensive fell on the German Second Panzer Army, which could not hold its ground against the onslaught and began pulling back. This in turn threatened the Ninth Army to its south with encirclement, forcing Model to pull back from the small sliver of territory they'd gained during Operation Citadel and withdraw to the west of the Soviet offensive to avoid encirclement.

The Germans were able to evacuate the Orel salient in good order and avoid encirclement, which came as a disappointment to Red Army soldiers, who had been hoping for another Stalingrad. Still, they had pushed the enemy back, and after three weeks of heavy combat, the Red Army retook the city of Orel on August 5. On that day, Stalin ordered an artillery salute in Moscow to honor the soldiers who captured the city. This became a regular practice going forward, but Orel was first, and the city still bears the nickname, "City of the First Salute."

Another first was celebrated in Orel six weeks later, when Soviet partisans who had harassed the Germans in the region around the city during the occupation paraded through the streets in triumph.

But the Red Army wasn't finished yet. Even as the Germans abandoned Orel, farther south another offensive began, this one against the northern flank of Army Group South, codenamed Operation Rummyantsev, named after the Russian field marshal who had served under Catherine the Great. Army Group South was overextended after retaking Kharkov. The same day the Red Army forces farther north retook Orel, this southern offensive retook Belgorod and pushed on to the south, now threatening the Germans in Kharkov with encirclement.

The recapture of Kharkov from the Soviets five months earlier had taken some of the sting out of the defeat at Stalingrad, and Hitler ordered the city be held at all costs. Manstein led a series of armored counterattacks that delayed the Soviet advance, but on August 20, he told Hitler he simply did not have the numbers to hold the front line he'd been assigned, and he needed either large numbers of reinforcements, or permission to withdraw. Hitler gave him permission to withdraw. Kharkov fell to the Red Army on August 23, the fourth and final time the city would change hands. In Moscow, 224 guns fired twenty salvos to salute the soldiers who recaptured Kharkov, and ten Red Army infantry divisions involved had "Kharkov" appended to their names, as in 84<sup>th</sup> Kharkov Infantry Division.

These three actions: Citadel, Kutuzov, and Rummyantsev, are collectively referred to as "the Battle of Kursk." By some measures, the Battle of Kursk was and remains the largest tank battle in military history, with the Germans fielding around 2,000 and the Soviets 4,000. Tank maneuvers across the open terrain kicked up enormous clouds of dust. It has been suggested that the world afterward experienced a period of climate cooling caused by these tremendous amounts of dust, which circulated around the globe.



What began as the German 1943 summer offensive developed into a crushing Soviet victory, the first summertime Soviet victory of the war. Casualty figures are difficult to come by, as many of the German Army's records from this time are lost or destroyed, but here are some estimates: the Germans lost around 45,000 killed and 130,000 wounded. The Red Army lost around 300,000 killed and 800,000 wounded, numbers that are around six times greater.

The Germans lost about 1000 tanks and 700 aircraft, while the Soviet side lost 5,000 tanks and 3,300 aircraft, losses around five times greater.

Even though Soviet losses were much higher, the Soviets had much larger personnel reserves and manufacturing capacity. They could afford losses on this scale.

The Germans simply couldn't. The losses at Stalingrad had been severe, and the German military had needed several months to muster the soldiers and equipment to mount Operation Citadel, and even those numbers had proved inadequate. Gone now is any hope of recreating the massive encirclements of 1941. This front has developed into a grinding war of attrition and it is already obvious which side can afford the cost of fighting such a war and which cannot.

We'll have to stop there for today. I thank you for listening and I'd like to thank Antonio and Nicholas for their kind donations, and thank you to Alejandro for becoming a patron of the podcast. Donors and patrons like Antonio and Nicholas and Alejandro help cover the costs of making this show, which in turn keeps the podcast available free for everyone always, so my thanks to them and to all of you who have pitched in and helped out. If you'd like to become a patron or make a donation, you are most welcome; just visit the website, [historyofthetwentiethcentury.com](http://historyofthetwentiethcentury.com) and click on the PayPal or Patreon buttons.

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We're in the period now where we're preparing for our son's surgery, so allow me to remind you that we are on a biweekly schedule for the time being—hopefully not too long. So I hope you'll join me in two weeks' time, here on the *History of the Twentieth Century*, as we turn back to the Pacific Theater and see how Japan is coping after their failure to retake Guadalcanal. Pop Goes the Weasel, in two weeks' time, here, on *The History of the Twentieth Century*.

Oh, and one more thing. In 1955, Manstein published his memoir, titled *Lost Victories*. The title gives away the point he was trying to make, which was that Hitler's poor leadership cost Germany the war. He was hardly the first general to write a memoir blaming defeat on someone

else, but neither was he forthcoming about the Wehrmacht's role, and his personal role, in perpetrating either the Holocaust or the mass murders of Red Army prisoners.

Too many historians, in Germany and elsewhere, accepted the claims of surviving Wehrmacht commanders that they were merely professionals carrying out their duties and had nothing to do with Nazi war crimes. It was not until late in the century that the German military's share of the guilt was brought fully to light.

[music: Closing War Theme]