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Protecting the Motherland

In books about the second world war, the battle of Bryansk is a minor conflict, barely deserving of a footnote. But this battle, so inconsequential that most historians skim over it without a second thought, has another place in history. It was here that a then unknown tank commander named Mikhail Kalashnikov decided that his Russian comrades would never again be defeated by a foreign army. In the years following the Great Patriotic War, as Soviet propagandists dubbed it, he was to conceive and fabricate a weapon so simple and yet so revolutionary, it would change the way wars were fought and won.

When the German army invaded the Soviet Union, it employed a new and frightening style of warfare. Blitzkrieg, or "lightning war," was a fast and open doctrine of assault that relied on pounding the enemy with massive air bombardments and long-range artillery attacks. Concentrated legions of tanks and infantrymen followed. They fired at almost point-blank range, leaving the enemy stunned, terrified, and unable to respond.

Blitzkrieg's success hinged on concentrating forces at a single point in an enemy's defensive line, breaking a hole in that line, then thrusting deep into enemy territory, catching the opposition off guard and subjecting them to wave after wave of well-organized and brutally efficient invaders. It would all happen so quickly and on such a massive scale that armies were decisively beaten almost before they knew what hit them. The effects were psychologically devastating.

The Nazi regime employed blitzkrieg brilliantly in its swift and fierce defeat of Poland in September 1939. The tactic served Germany the following year when it invaded the so-called Low Countries—the Netherlands, Belgium, and Luxembourg—each victory allowing the Germans to build momentum and confidence. Soon after, Germany invaded France. In one instance, small and determined groups of Panzer tanks broke through French lines and reached the coast before a counterattack could even be launched.

In many ways, blitzkrieg was a logical reaction to the way war had previously been waged. During most of World War I, armies hunkered down in trenches, sometimes for months at time. Nations spread defensive lines thinly along national borders and around crucial cities. Troops armed with stationary machine guns in bunkers could repel enemy advances. Snipers poked their heads above trench tops in the hopes of picking off an opposing soldier barely visible in the distance. It was largely static warfare.

Hitler's army employed tanks and trucks—an outgrowth of the greater reliability of the internal combustion engine—and two-way radios in a concerted effort to strike the enemy at one specific point on the ground with a fast and furious show of power. Field officers were given greater responsibility in advancing their troops as fast as they could without specific orders from central command. In its simplest form, this method of waging war relied on a centrally coordinated strategy, well-trained soldiers, and a large quantity of technologically advanced matériel and the logistical infrastructure to support it. The army with these ingredients was almost guaranteed success.

So it was no surprise that blitzkrieg became Germany's main strategy during its invasion of the Soviet Union in June 1941, and soldiers, including Kalashnikov, suffered its brutal effects.

Because the two countries were supposedly allies, and had even carved up Poland between themselves several years earlier, the unexpected nature of the attack and its lightning force crushed Soviet ground forces immediately. Through city after city, town after town, superbly trained and highly disciplined German units advanced, quickly annihilating Soviet armies and civilians in their path. German infantrymen killed hundreds of thousands with fire from their automatic Maschinenpistoles (MPs), or submachine guns, spewing hundreds of rounds into knots of Soviet defenders a few yards away. They cut down soldiers and civilians en masse.

The Germans were unstoppable as they pressed on to the ultimate prize, Moscow, destroying everything in their way.

In late September 1941 the German juggernaut reached the outskirts of Bryansk, located deep in the forest and hard against the Desna River southwest of Moscow. The Luftwaffe had bombed Bryansk and its surrounding area in July in preparation for a ground attack. Thousands of Soviets evacuated the area. Factories were moved to more secure eastern locations. The inhabitants dug antitank trenches around the town.

All of these preparations proved useless. The Nazis destroyed about 90 percent of the town's housing and killed more than eighty thousand people. About two hundred thousand were forced into slave camps where most of them later died from starvation or torture.

During the battle of Bryansk, Kalashnikov's tank was maneuvering around an enemy flank when it was hit by artillery. His ears rang; a fragment of the tank's armor pierced his left shoulder and knocked him unconscious. Shell-shocked and bleeding, he and twelve others, including an attending physician, were transported to a hospital. As they entered a nearby village, Kalashnikov and the driver left the truck to check for enemy soldiers. The town was empty and dark. As they made their way through deserted streets,

German soldiers armed with submachine guns overtook the truck, riddling it with bullets. When Kalashnikov and the driver heard the automatic fire they ducked into some bushes, then crawled back to the men they had left behind. When they arrived, they saw German motorcycles with sidecars just disappearing around a turn.

The scene was horrifying. Soldiers were lying zigzagged in the truck bed where they had been shot. Others, who had tried to escape, lay in the dirt road. Some of them, seconds from death, screamed in agony as they expired. Kalashnikov vomited at the sight of the mutilated men.

For the next few days, the two survivors traveled on foot, desperate to avoid the deadly German patrols. Tired, fearful, and wounded, they finally reached a hospital. Though Kalashnikov was now safe in his hospital bed, receiving treatment for his infected wounds, he couldn't relax, especially at night.

He endured nightmares about the truck and the Germans with their superior submachine guns slaughtering his comrades. In great pain, he lay in bed and thought about his life, about the peril of his homeland, about his parents and the little town where he lived.

MIKHAIL TIMOFEEVICH KALASHNIKOV was born on November 10, 1919, into a world that had just seen the end of World War I—"The War to End All Wars"—and hoped for a lasting peace. His family had been exiled to the cold, desolate Altai village of Kurya during political purges, something that the sickly boy did not comprehend. In this harsh environment, only eight of the family's nineteen children survived.

Always one to tinker—Mikhail had taken apart every lock in his village—he and his friend obtained a U.S.-made Browning pistol. Mikhail cleaned it, shined it, took it apart and reassembled it over and over again. He burned with desire to fire it, to watch it work. He was frightened yet fascinated by the firearm and hid it

in a pile of junk from the authorities, because it was illegal to possess such a weapon.

Somehow, the militia learned of the gun, and the teen was arrested but later released. He had vehemently insisted he did not own a pistol, and the authorities were unable to find it.

Fearing that he would be found out eventually, Kalashnikov and his friend fled, scattering pieces of the Browning in the snow along the way. He later wrote of this prophetic experience, "That was it. The perpetrator of my hardships, my first acquaintance with arms."

After making his way to Kazakhstan and finding a job with the railroad, Kalashnikov was drafted in 1938. Because of his mechanical acumen, he was assigned to a tank company, where he invented several improvements to gauges that checked engine operating hours. He was never able to fully test his inventions, however, because Germany attacked in June 1941, and he was sent to the front. Before he left, he heard stories of the Germans' superior tactics and savagery, but he had no idea he would be a victim or how it would change his life.

Only a few weeks after shipping out, Sergeant Kalashnikov was out of the war for good. His injuries were substantial enough to keep him from serving again. Convalescing in the hospital, he naively promised himself to build a weapon that would drive the Germans out of his homeland. This promise turned into obsession. "I thought about it when I woke up at night, and tried to imagine what kind of submachine gun I would make. In the morning, I took a notebook from the night table and made various drawings. Later, I redid them many times."

In an effort to keep his mind diverted from pain, he read everything he could find at the hospital library about submachine guns—which many military planners saw as the ultimate infantry weapon and the key to winning land battles. Combatant nations had quickly put into production their own submachine guns, but the Soviet Union was late to the game and few soldiers had access to these rapid-fire weapons.

What frightened Kalashnikov and other Soviet soldiers was the German Maschinenpistole (MP40), also known as the Schmeisser after weapons designer Hugo Schmeisser. Hugo Schmeisser did not actually design the MP40, but he worked on the MP41, which was an MP40 outfitted with an old-fashioned wooden rifle stock. Like all submachine guns, it fired pistol-sized bullets—nine millimeters in diameter, the familiar 9mm of many contemporary pistols—instead of the larger, more powerful ammunition used in rifles. (Sometimes the distinctions between pistol and rifle rounds are not always clear cut because pistols can use large-sized rounds and rifles sometimes can use small-sized rounds. With some exceptions, however, rifle rounds are generally longer and heavier and contain more propellant, thus offering more "killing power.") This necessitated firing at close range to be effective, but the MP40 made up for this drawback by being lightweight, easy to handle, and able to stream bullets at an astonishing rate of 500 rounds per minute. The magazine, a device that automatically feeds ammunition into the gun, carried thirty-two bullets, or rounds in military parlance. The MP40 (with most small weapons, the number designates the year it was introduced or produced, 1940 in this case) also was shorter than a rifle and could be easily carried by airborne and tank soldiers. It was the first firearm of its kind to be made entirely of metal, with no wooden stock or handle grips, which made it almost indestructible. By 1945, the Germans had produced over a million of these, and it became so popular that even Allied soldiers preferred using these captured weapons instead of their own submachine guns, which were variations of the Thompson submachine gun, or "Tommy Gun," of 1920s gangster fame.

Indeed, the Soviet Union had a submachine gun, the PPD34/38, but it was poorly designed. Although it fired 800 rounds per minute, it was heavy and unreliable in combat. It was also too difficult to mass-produce. A much simpler weapon followed, the PPSh41, which was put into limited production in 1941 but not approved until the following year. The gun was popular with troops. However, it was not as well made as its German counter-

part, because the Soviet Union's riveting and welding technology lagged far behind that of the Germans.

Upon his release from the hospital, Kalashnikov convinced friends at the railroad to allow him to work in their metal shop. With his left arm stiff and not fully recovered, he set about improving his motherland's submachine gun, because the war on the eastern front was still raging with no end in sight.

Hitler had made a strategic error that offered the Soviets some breathing room to develop weapons. Instead of sending all his troops directly to Moscow, an overconfident Führer rejected the advice of his generals and diverted one of his three armies south to occupy the Ukraine, which was rich in oil and gas resources. After more than a month on this distraction, Hitler was running out of time; the harsh Soviet winter was coming fast. Mud roads were becoming frozen slabs and his troops were not prepared for the frigid weather. By November, the Germans had reached within seventeen miles of the Kremlin, but could advance no further due to a Soviet counterattack aided by temperatures dropping to minus twenty-nine degrees Fahrenheit. German soldiers were not acclimated or dressed for the cold; many froze to death, and the survivors were exhausted. The Germans found themselves on the defensive for the first time.

With neither side able to extract a clear victory, the war continued, and so did Kalashnikov's work. Along with several others, he toiled for several months in the railroad shop, producing a submachine gun that he hoped would level the battlefield. His single goal was to protect the motherland. With the prototype under his arm, he made his way to Alma-Ata, where he attracted the attention of Communist Party and military officials who saw promise in this self-taught designer. Although they rejected his submachine gun, Kalashnikov garnered some important lessons. He learned that his weapon was too complex to perform under rigorous combat conditions. For example, the firing mechanism employed too many moving parts. The gun overall had many small parts, increasing the chance that if any single piece were to fail, the gun would be

rendered inoperable. However, seeing a spark of genius in this young man, the authorities offered Kalashnikov the opportunity to hone his skills at a technical school, where he invented a carbine, a weapon that was popular because of its versatility.

A CARBINE IS SIMILAR to an ordinary rifle but with a shorter barrel and stock. It was originally developed for cavalry soldiers because they could not fire a full-sized rifle from horseback. Later, carbines were the logical choice for paratroopers and tank soldiers, because they were light and fit in tight quarters. Unlike submachine guns, which use pistol-sized rounds, carbines employ larger, rifle-type ammunition.

Many regular rifles, like the M1 Garand, the mainstay of U.S. troops during World War II, came in both full-length and carbine versions. In fact, Kalashnikov borrowed and modified for his own carbine the M1's method of feeding bullets from the magazine into the chamber for firing as well as the spent cartridge ejection system.

By this time, however, it was becoming clear to the German military, the Wehrmacht, that warfare was changing again and neither the submachine gun nor the carbine were the best infantry weapons. Submachine-gun ranges were too short and their bullets too light for combat that was now being fought at ranges between three hundred and one thousand feet, the result of battles taking place mainly in urban environments. Machine guns had the range and the killing power of larger bullets but were too heavy to carry in fast-moving combat situations. In addition, the massive recoil from machine guns jerked the weapon around, which made them difficult to keep on target. A new kind of weapon was needed that combined the light weight of the submachine gun with the range and killing power of a machine gun.

Unbeknownst to Kalashnikov and Soviet arms designers, the Germans were already working on just such a weapon, and the key to its success was not the gun but a new kind of ammunition.

In many instances, the arcane and minute design elements of ammunition are much more complex and controversial among ballistic engineers than the weapons that fire them. Changing a bullet's weight by a few grams, altering its shape from sharp-pointed to blunt, or using a few grains more or less of powder in the cartridge case can offer a soldier a vastly different fighting tool irrespective of the gun.

Ammunition is composed of several parts. The first is the bullet, the actual projectile. Bullets are usually made from a mixture of lead and tin, and most military bullets are jacketed with copper or steel to make them harder, the so-called full metal jacket round.

The bullet sits atop and within the cartridge case, held tightly in place by a crimp in the case. Brass is the metal of choice for the case because it is soft enough to crimp yet hard enough to keep its shape during the rapid firing and ejection process. The case actually stretches slightly as soon as it is subjected to pressure, sealing the breech, a process known as obturation. It retracts as soon as the pressure drops. Brass is also lightweight for its strength. Inside the case sits powder that ignites when the firing pin in the gun strikes the primer bottom at the center of the case—much like hitting an old-style match head—which then lights the powder. When the powder ignites, it propels the bullet out of the cartridge and through the barrel at supersonic speed.

German armament engineers in the 1930s began experimenting with an intermediate cartridge (often the word "cartridge" is used to signify the entire round—bullet plus cartridge case), sized between a pistol round and a rifle round, and they came up with a compromise in the PP Kurz (kurz means "short"), which was "7.92 × 33"—the bullet was 7.92 millimeters in diameter and the case holding it was 33 millimeters long.

Sometimes, ammunition is measured in America and Britain (which continue to resist the metric system) in inches instead of millimeters, and referred to as calibers. A caliber is one inch or 25.4 millimeters. To further complicate the nomenclature, caliber sizes are not always exact; a so-called .38 Police Special bullet is

actually .357 inches, and a .44 Magnum of *Dirty Harry* fame is really .429 inches in diameter.

The new German round, thinner than a rifle round and thicker than a pistol round, was a vast departure from previous submachine-gun ammunition and opened up a world of new possibilities in rapid-firing guns that were light enough for an infantryman to carry, along with a large amount of ammunition, and easy to keep on target. As a bonus to designers, the less powerful rounds offered decreased wear and tear on rifle barrels and other components.

While the Soviets were still working on perfecting a submachine gun, German designers Hugo Schmeisser and Carl Walther, whose company produced James Bond's pistol of choice, the Walther PPK, were busy building competing prototype rifles employing the intermediate Kurz round. By 1942, they were testing the Maschinenkarabiner, or Mkb for short. As the name implied, it was a hybrid of a machine gun and a carbine, but Hitler did not like this idea at all. He was wedded to submachine guns despite their shortcomings, so in an effort to circumvent him the designers and their military supporters decided to rename it Maschinenpistole (MP), or submachine gun, which *was* on the Führer's "approved list" of weapons.

The Mkb42, or MP42, was field-tested against Soviet troops in the battle of Cholm in 1942. Cut off from conventional supply routes, a German army corps found itself encircled by the Soviets in Cholm on the Lovat River south of Leningrad. From February to April, German troops died daily from malnutrition and cold, until a cache of prototype Mkbs was airdropped. Using these new weapons, the Germans were able to blast their way through the Soviet lines and escape.

It is not recorded if the Soviets were able to capture one of these breakthrough weapons, but they were impressed by its performance, and so was Hitler, who finally admitted that these rifles outperformed submachine guns. Two years later, in 1944, in a face-saving move, he dramatically renamed the Mkb the Sturm-

gewehr, or assault rifle, offering the world a new class of automatic weapon and a name that endured. Had World War II continued, all German soldiers would have received this weapon as regular issue.

While this was transpiring, the Soviets had been working on their own medium-sized cartridge, the 7.62 × 39, also known as the M43 for the year it was approved by Josef Stalin, who, unlike Hitler, saw the need for a new type of ammunition and weapon to fire it. In the quest for a rifle to fire the new round, the government established a contest among designers. A who's who of venerable Soviet designers entered, including Alexei Sudayev and Sergei Simonov, people virtually unknown in the West but who were household names among Soviets, on a par with legends Samuel Colt and Smith & Wesson. There was also an unknown designer who humbly threw his hat in the ring, Mikhail Kalashnikov, now only in his twenties.

By the time Kalashnikov began work on a rifle to use the new cartridge, the war was winding down and his dream of being the one to produce a weapon to drive out the Germans was dashed. In addition, Sudayev, who won the contest, designed an automatic rifle with too many production shortcomings to be considered practical.

MANY MILITARY HISTORIANS miss the cruel irony of the automatic rifle story, in which the Soviets were their own worst enemy. Although the German Sturmgewehr was considered the world's first assault rifle, the concept had inadvertently been invented in Russia in 1916 by Vladimir Federov, an arms maker for the tsar. Federov's Avtomat ("automatic") employed an intermediate round favored by Japanese soldiers, whose smaller frames preferred the recoil of the less powerful ammunition. Federov's genius was to place the 6.5 × 50.5mm Arisaka round in his automatic rifle, but he did so because the commonly used larger rounds were too hard on the Avtomats and required heavier bolts, pistons, and other

components. He and his contemporaries knew little of the battlefield imperatives that would later necessitate the intermediate round. He was simply trying to make his guns last longer.

Federov's brilliance was lost with the Russian Revolution of 1917, when his political beliefs landed him on the wrong side of the changing government. He even spent time in prison. More importantly, the officers in the field did not understand that this new weapon and round combination was the wave of the future. They still clung to the idea of a more powerful, longer-range ammunition and the mistaken belief that soldiers would always fight battles at long range. As the new regime cleaned house, it swept his work away and the Soviets went back to the old, larger round, which remained standard until 1943. Indeed, some arms historians argue that the Germans were familiar with Federov's early work and built their Kurz cartridge on his experience. Whatever the true story, the Soviets were now playing technological catch-up. But the ending of the war afforded them the luxury of more time. With the Third Reich beaten by the Allies and the U.S. military showing no interest in assault rifles, the postwar Soviets had a clear road ahead.

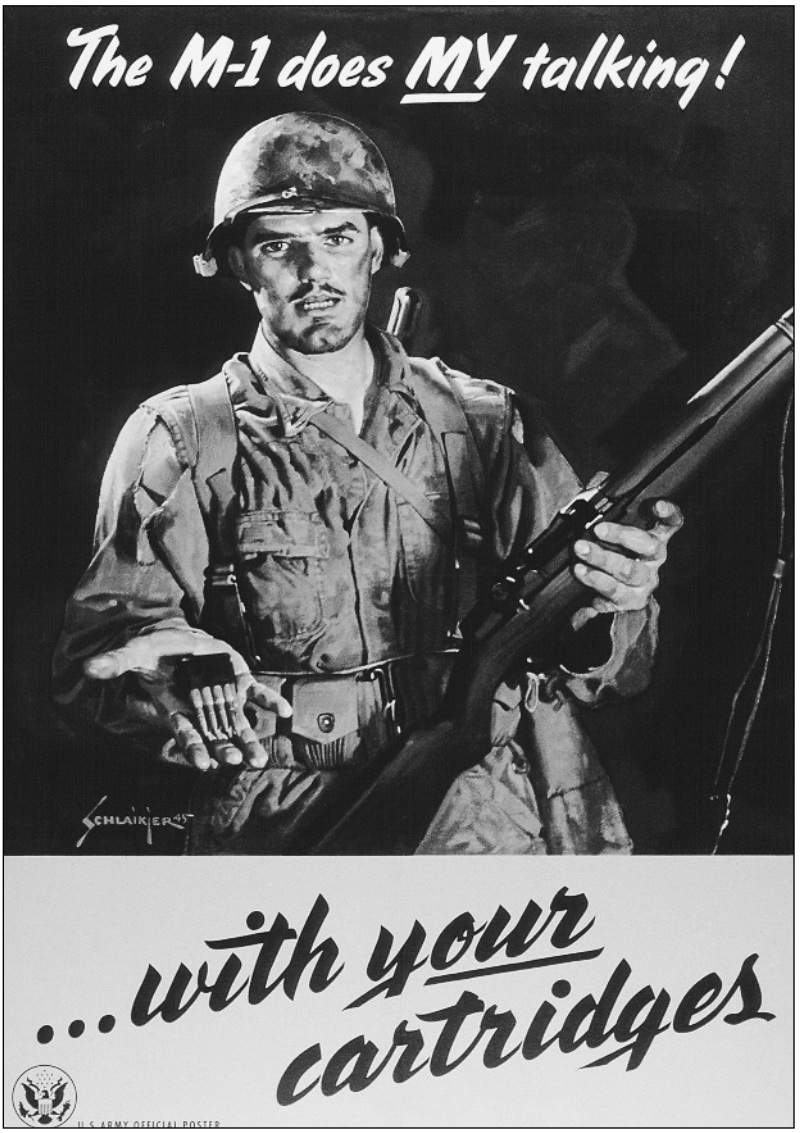
The U.S. military was oblivious to the weapons revolution playing out in Europe. As World War II was winding down, American ordnance experts sent back samples of the German Sturmgewehr for study by the Springfield Armory that produced the M1 Garand semiautomatic rifle, considered one of the finest weapons of its type. Unlike an automatic, which sprays bullets with one continuous pull of the trigger, the semiautomatic requires one trigger squeeze per round. Although U.S. forces had heard about the power of Germany's light automatic weapon, and now had them under the microscope, the upper echelon refused to acknowledge the innovation. Like the early Soviets, they believed in the higher-powered round shot long distances by a soldier/marksman. They continued to believe that the key to war was strategy, training, and high-tech weaponry. When they studied the Sturmgewehr, they could not

get past the fact that these weapons were machine-stamped and welded, which in the United States was considered a second-class production method compared to machine milling and forging. They did not understand that Germany had taken stamping and welding to a high art, and that the weapons were lighter and just as rugged as guns with machined and forged parts. Armory personnel dismissed the weapons as flimsy and cheap-looking.

Although Kalashnikov had great natural instincts about weaponry, his lack of formal education put him at a disadvantage, so authorities teamed him with a small "collective" to help refine his ideas. In addition, he believed in what we would call today a "focus" group, listening to soldiers who actually fired the weapons and then offered their opinions. Using soldiers' feedback, the weapon was changed and refined.

The young man's success also lay in his ability to take the best ideas available from other gun makers, then combine and refine them. For example, submachine guns of the day relied on a "blowback" system that used the power of gases shooting backward from the bullet to push back a bolt that ejected the spent cartridge and allowed a fresh one from the magazine to emerge into the chamber for firing. This system worked fine for pistol-sized bullets but not for the intermediate bullet. These new rounds were too powerful, requiring a massive bolt to control them, making for a much heavier gun. Kalashnikov realized this and opted for a gas-activated automatic weapon that used a "short stroke" piston to push back the bolt and eject and load another round. The piston offered the extra power necessary to move the heavier bolt. Although it may sound complicated, the system was actually simple in the world of arms makers.

When a cartridge's primer is struck with a firing pin, the exploding powder creates gases that propel the bullet out at speeds greater than twenty-three hundred feet per second. As the bullet travels through the barrel, gases build up behind it but cannot escape because the spent cartridge is sealing one end and the bullet, traveling tight against the barrel walls, is blocking the other end.



The M1, or Garand, as it was known for its designer, John Garand, performed flawlessly during World War II, prompting General George Patton to call it "the greatest battle implement ever devised." It was simple and reliable and the first self-loading rifle to be adopted by any army as standard issue. Unfortunately, the rifle was heavy, clunky, and only held eight rounds in its magazine. While Germany and the Soviet Union were moving toward automatic weapons, U.S. military planners clung to old ideas that put GIs in greater jeopardy with their outmoded rifles. *U.S. Department of Defense*

As the bullet nears the mouth of the barrel, a vent in the barrel diverts some of these gases into a tube that sits parallel above or below it. The gases hit a piston inside the tube, which pushes a connecting rod into the bolt carrier, forcing it backward. The bolt carrier extracts the spent cartridge from the breech and ejects it, allowing the next round to enter the chamber from the magazine, where ammunition is pushed upward by constant pressure from a spring. The signature banana-shaped magazine is a function of how the cartridges lie when placed side by side. Because they are narrower at one end, the natural and most economical shape of a thirty-round stack of 7.92mm rounds is a curve.

Every time the trigger is pulled, the firing pin strikes the primer in the center of a cartridge, firing a bullet, and the cycle continues. This happens at a rate of more than 600 rounds per minute when the selector lever is in the automatic position.

Because their fast-moving parts are confined in such a small space, automatic rifles have a tendency to jam. All it takes is a speck of dirt to clog the various movements or keep a round from being positioned properly in the firing chamber. This is where Kalashnikov shined. The bolt rotated widely, making it easy for the round to find its proper place in the chamber. Think of trying to poke a pencil into a hole drilled in a piece of wood. It would be much easier if, when you got the pencil tip near the hole, even slightly askew, you rotated it. This turning action would slide the pencil in much easier than if you just poked it straight. This is one of the best parts of Kalashnikov's design.

In addition, rather than build components that fit tightly into each other, often a signature of professional gun makers, Kalashnikov went the other way, designing components with looser tolerances, more space between parts. Instead of dirt or sand clogging the gun, debris was thrown off in the firing process. During one test, soldiers dragged the gun through what was called the "sand baths." Each rifle groove and slot was clogged with sand. "I began to doubt that further shooting would proceed without failures," Kalashnikov recalled. An engineer watching the test voiced

similar concerns. But the gun fired flawlessly. "The sand is flying in all directions, like a dog shaking off water," a team member shouted.

AK PROTOTYPES WERE constantly honed and field-tested, each part altered based on soldier feedback. Unlike with many inventions, there were no Aha! moments in Kalashnikov's work, only constant incremental improvement until it was soldier-proof. For example, the safety switch, which prevented the gun from accidentally firing, was combined into a single lever that also acts as a dust cover for the ejection port. In other words, a soldier who put his weapon on "safe" to slog through mud without inadvertently firing the weapon, did not also have to remember to close an additional latch to keep dirt out. Again, this was not a new idea—it existed on the Remington Model 8, one of the earliest American semiautomatic rifles, first produced in 1906—but it was Kalashnikov's cleverness and humbleness that allowed it to be employed in a Soviet weapon. Kalashnikov did not subscribe to the "it wasn't invented here" syndrome that plagued many other gun makers, and he wasn't interested in producing a unique or profound piece of machinery. His only goal was to build a weapon that would work every time. He cared even less how it looked. While other designers sought to make their guns sleek and contemporary-looking, Kalashnikov dismissed this as window dressing and very anti-Soviet, which promoted utility over style.

During these testing years, Kalashnikov often found himself guided by the words of arms designer Georgy Shpagin, who developed the successful PPSh41 submachine gun: "Complexity is easy; simplicity is difficult."

Kalashnikov's gun also had to be easy and inexpensive to manufacture with current technology and capabilities. Again, he learned from the mistakes of Federov's Avtomat, which could not be built rapidly or easily, drawbacks that sank it. Although milled or forged components were generally stronger, they were also more

time-consuming and expensive to make. Kalashnikov's prototype weapon would have a stamped receiver, the gun's main frame.

After scores of modifications and adjustments, the new weapon was approved for production in 1947 with the name AK-47 (Avtomat Kalashnikova 1947), but work continued for several more years to improve the weapon before it would be officially issued to the Soviet army.

The AK-47 underwent more than a hundred modifications between 1947 and 1949. During that time, Kalashnikov had moved to Izhevsk Motor Plant 524, partially to get out of the shadow of more prominent designers who looked down upon the lowly sergeant who had moved up too fast and had not paid his dues with the obligatory decades of work. Izhevsk Motor Plant 524 was not an automotive plant but a front for an arms factory, the name designed to keep away Western spies now that the Communist satellite countries were established. Stalin's blockade of Berlin had begun and the cold war was in full swing.

By the end of 1949, arms plants had turned out about eighty thousand AK-47s, but one major modification was necessary before it could be issued to all Soviet troops and their allies. Soviet metals technology still lagged and assembly plants could not manufacture stamped receivers in large numbers. Because Kalashnikov was not versed in production techniques, the job fell to other engineers, who changed the AK assembly lines to produce forged receivers. This made the gun heavier and more expensive to produce, but there was no choice. In gearing up for the cold war, these weapons had to be made quickly.

The AK was the ideal weapon for the Soviet Union, and the nation's leaders built military and political doctrine around it. In the early days of the cold war, Soviet military planners believed that large land battles would take place between East and West on Russia's western border similar to those of World War II. Soviet authorities envisioned the so-called encounter battle in which Soviet troops would meet the enemy head-on at various pinch points. Believing that they had the more maneuverable tanks and

This AKM ("AK Modernized") introduced in the 1950s is a simplified, lighter version of the original AK-47, the world's most devastating weapon. Its banana-shaped magazine gives this gun a familiar silhouette that makes it the symbol of what an assault weapon should look like. It is the undisputed firearm of choice for at least 50 legitimate standing armies, along with untold numbers of disenfranchised fighting forces ranging from international insurgents and terrorists to domestic drug dealers and street gangs. Between 75 and 100 million have been produced. The vast majority of AK-47s in service around the world are actually AKM models. *U.S. Department of Defense.*

armored vehicles, the Soviets would attack the oncoming columns from the flanks, with infantrymen delivering thousands of rounds per minute. They would penetrate into enemy lines and overwhelm them similar to the blitzkrieg strategy. This type of close-quarter, massive infantry assault was the AK's forte, especially in the hands of a typical Soviet soldier.

The Soviet Union had a huge conscript army of poorly trained soldiers, many of whom could not read or write, and those that could often spoke diverse languages from the various Soviet states. This made standardized training difficult. Again, the AK suited the Soviet army because it was easy to fire, did not require a written manual or training, and rarely broke down.

In contrast to the U.S. military, which prided itself on having a pool of well-trained troops taught to make every shot count through intensive training and practice, the AK allowed the Sovi-

ets to put thousands of men into service quickly and with a respectable chance of killing the enemy. Because the AK employed an intermediate round, with less recoil than larger rounds, it allowed even inexperienced soldiers to control its accuracy during multiple bursts.

The Soviet military worked hard to keep the existence of the AK hidden from the West. Soldiers issued AKs carried them in special pouches that hid their shape. They were also instructed to pick up spent cartridges after maneuvers to keep the new ammunition secret.

Military and other official accounts differ on when the West learned of this deadly new weapon. Although the Soviets supplied arms to North Korea during the Korean conflict, it is not clear if they offered any AKs. U.S. Army historians make no mention of GIs seeing the weapon, and many Soviet records from the time are unavailable. Certainly, the Chinese, who supported the North Koreans with weapons and funds, would have welcomed the gun. Stalin was pleased to see China turn Communist in 1949 under Mao Tse-tung, and Mao's brutal vision of war was eerily made to order for the AK. The Maoist strategy called for massive numbers of citizen soldiers armed with simple weapons to engage a technologically superior army in guerrilla and large-scale attacks. Sheer numbers, Mao believed, could win against any army no matter how sophisticated its weaponry. Even though the Soviet Union and Communist China chose different military tactics, they both benefited from the AK's characteristics. China's tactics were put into practice in Korea when U.S. and UN–sanctioned forces faced hordes of Chinese soldiers in many battles, leaving both sides with massive casualties. In 1953, after three years of brutal fighting and millions of dead, the hostilities ceased with a shaky armistice on the 38th parallel that continues today.

In 1956, events in Eastern Europe forced the Soviet Union to unveil the AK in public. The tumult began on October 23 with a peaceful demonstration by students in Budapest, Hungary, who demanded an end to Soviet occupation and the implementation of

"true socialism." The police made some arrests and tried to disperse the demonstrators with tear gas, but the crowds grew larger and more vocal. When the students attempted to free people who had been arrested, the police opened fire on the crowd. Within days, soldiers, government workers, and even police officials had joined the students.

Nikita Khrushchev, now leader of the Soviet Union, grew increasingly concerned about the situation and dispatched the Red Army to Hungary. They rode in tanks and in trucks, carrying their AKs. The demonstrators fought with whatever weaponry they could find, including Russian submachine guns, carbines, single-shot rifles, and grenades, much of it taken from liberated military depots. This was the Soviets' first large-scale use of the AK, and it performed flawlessly in an urban environment where tanks became bogged down in narrow streets against crowds wielding Molotov cocktails. The revolt was squelched, with as many as three thousand Hungarians and about 720 Soviet soldiers killed.

According to U.S. Army archives, American intelligence officers took note of the AK but appeared not to be concerned. When the Springfield Armory, the U.S. military's weapons maker since 1794, tested the Soviet weapon that year, they too appeared indifferent. It would not be until a decade later during the Vietnam War that American GIs would face the AK in action for the first time. These soldiers would pay dearly for their government's abject failure to recognize the far-reaching significance of Kalashnikov's simple weapon.