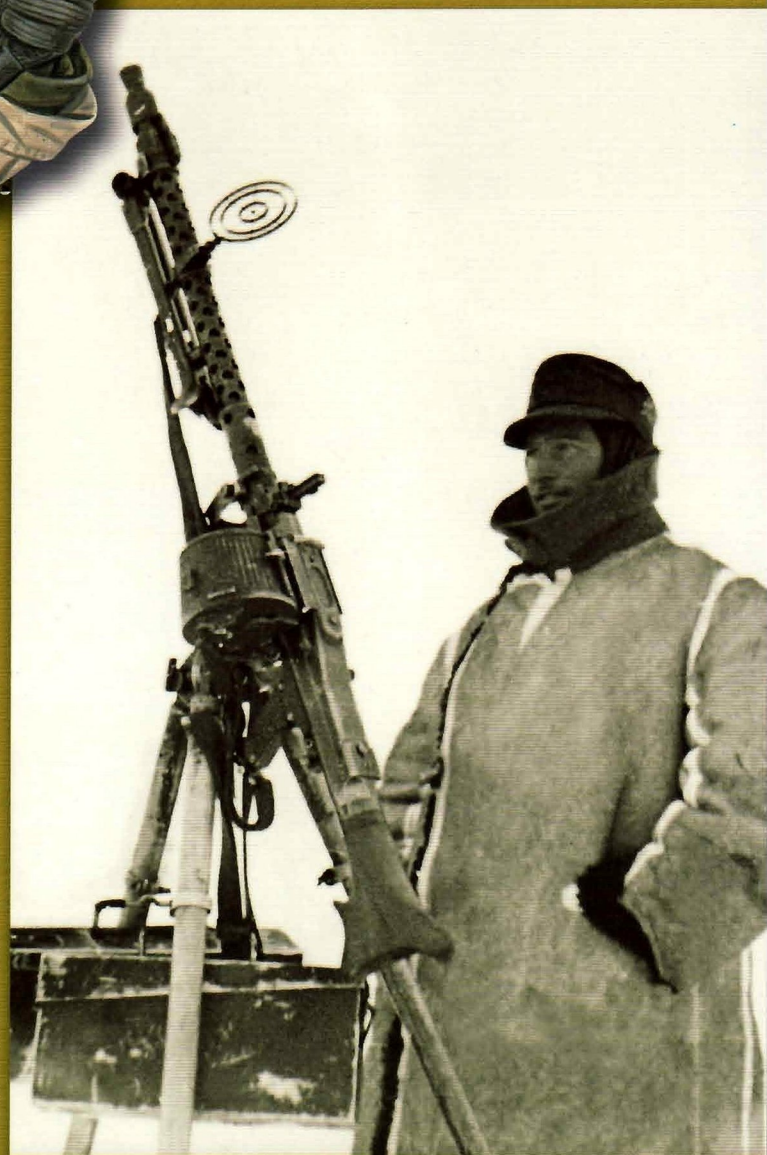


Battle in the East

The German Army in Russia

Gordon Rottman & Stephen Andrew



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Introduction

On 22 June 1941 the greatest invasion in history was unleashed by Germany against the Soviet Union: Operation Barbarossa (Unternehmen Barbarossa). The German Army and Waffen-SS units faced a front more than 1,000 miles wide with difficult terrain including wide rivers, endless steppes, vast dark forests and swamps. At first this broad front was defended by an inept and cumbersome Red Army. That army though had the space to plunge to the rear and draw the invaders deeper into the country with its poor road system, weak bridges and limited resources. The climatic conditions were equally hostile: a dry, hot summer filled with choking dust, endless seas of mud and flooded streams in the spring and fall, and an incredibly brutal winter. All seasons brought numerous health hazards. And then the once reeling Red Army found its feet and began the long fight back to the west.

The much vaunted German Blitzkrieg, Lightning War, which had driven the Red Army eastwards had been spearheaded by Panzer

and motorized infantry divisions. However, nearly 80 per cent of the German divisions that invaded the USSR were infantry. The standard infantry division that predominated in the Field Army included three infantry regiments and relied on horses and wagons to haul its ammunition and supplies and to draw its artillery. These divisions were provided with some truck transport for specialist units, but by and large counted on horses and boots for mobility. With 17,000 or more men, the infantry division also included an artillery regiment with four battalions; reconnaissance, antitank, pioneer (engineer), and signals battalions plus divisional services.

The German infantry division (Infanterie-Division) was a balanced combined arms formation capable of fighting in most types of terrain and climatic conditions if sufficiently supported. We will take a close look at the infantry division's component units and their roles. At the beginning of Unternehmen Barbarossa the division was composed like this:

Infantry Division

Divisional Staff

Infantry Regiment (x3)

Regimental Staff

Mounted Platoon

Pioneer Platoon

Signals Platoon

Infantry Battalion (x3)

Battalion Staff

Rifle Company (x3)

Machine Gun Company

Light Infantry Column

Infantry Gun Company

Antitank Company (Motorized)

Regimental Train

Artillery Regiment

Regimental Staff with Staff Battery

Artillery Battalion (Light) (x3)

Battalion Staff Battery

Light Field Howitzer Battery (x3)

Light Artillery Column

Artillery Battalion (Heavy)

Battalion Staff

Heavy Field Howitzer Battery (x2)

Heavy Gun Battery

Heavy Artillery Column

Regimental Train

Reconnaissance Battalion

Battalion Staff

Mounted Squadron

Cyclist Squadron

Heavy Squadron

Battalion Train

Antitank Battalion

Battalion Staff

Antitank Company (x3)

Battalion Train

Pioneer Battalion (Partly Motorized)

Battalion Staff

Pioneer Company (x2)

Infanterie-Division

Divisionsstab

Infanterie-Regiment (x3)

Regimentsstab

Reiter-Zug

Pionier-Zug

Nachrichten-Zug

Infanterie-Bataillon (x3)

Bataillonsstab

Schützen-Kompanie (x3)

Maschinengewehr-Kompanie

leichte Infanterie-Kolonne

Infanteriegeschütz-Kompanie

Panzerabwehr-Kompanie (motorisiert)

Regimentstroß

Artillerie-Regiment

Regimentsstab mit Stabsbatterie

Artillerie-Abteilung (leichte) (x3)

Stabsbatterie

leichte Feldhaubitzen-Batterie (x3)

leichte Artillerie-Kolonne

Artillerie-Abteilung (schwere)

Stabsbatterie

schwere Feldhaubitzen-Batterie (x2)

schwere Kanonen-Batterie

schwere Artillerie-Kolonne

Regimentstroß

Aufklärungs-Abteilung

Abteilungsstab

Reiter-Schwadron

Radfahr-Schwadron

schwere Schwadron

Abteilungstroß

Panzerjäger-Abteilung

Abteilungsstab

Panzerjäger-Kompanie (x3)

Abteilungstroß

Pionier-Bataillon (teilmotorisiert)

Bataillonsstab

Pionier-Kompanie (x2)

| | |
|--|---------------------------------------|
| Pioneer Company (Motorized) | Pionier-Kompanie (motorisiert) |
| Bridge Column B (Motorized) | Brücken-Kolonne B (motorisiert) |
| Light Pioneer Column | leichte Pionier-Kolonne |
| Signals Battalion | Nachrichten-Abteilung |
| Battalion Staff | Abteilungsstab |
| Telephone Company (Partly Motorized) | Fernsprech-Kompanie (teilmotorisiert) |
| Radio Company (Motorized) | Funk-Kompanie (motorisiert) |
| Light Signals Column (Motorized) | leichte Nachrichten-Kolonne (mot) |
| Administrative Service | Verwaltungsdienste |
| Provisions Office | Verpflegungsamt |
| Bakery Company (Motorized) | Bäckerei-Kompanie (motorisiert) |
| Butcher Platoon (Motorized) | Schlächtereizug (motorisiert) |
| Field Post Office (Motorized) | Feldpostamt (motorisiert) |
| Division Supply Leader | Divisions-Nachschubführer |
| Division Supply Leader Staff | Divisions-Nachschubführer-Stab |
| Supply Column (Motorized) (x2) | Nachschub-Kolonne (motorisiert) (x2) |
| Supply Column (Horse-drawn) (x3) | Nachschub-Kolonne (x3) |
| Light Supply Column (Horse-drawn) (x3) | leichte Nachschub-Kolonne (x3) |
| Fuel Column (Motorized) | Betriebsstoff-Kolonne (motorisiert) |
| Supply Company (Motorized) | Nachschub-Kompanie (motorisiert) |
| Workshop Company (Motorized) | Werkstatt-Kompanie (motorisiert) |
| Medical Service | Sanitätsdienst |
| Medical Company (Horse-drawn) | Sanitäts-Kompanie |
| Medical Company (Motorized) | Sanitäts-Kompanie (motorisiert) |
| Field Hospital | Feldlazarett |
| Ambulance Platoon (x2) | Kranken-Kraftwagen-Zug (x2) |
| Veterinary Company | Veterinär-Kompanie |
| Field Military Police Troop | Feldgendarmerie-Trupp |

The **divisional staff** consisted of the commander, a lieutenant general (often a major general later in the war), and numerous specialized staff officers, their assistants, and support personnel. The command unit comprised the commander, operations staff, and the commanders and their staffs of the artillery regiment, signals and engineer battalions, and other key divisional unit commanders were located in a main command post some distance behind the front line. The adjutant and quartermaster, responsible for personnel administration and supplies and services were in a rear command post even further behind the lines. So too were the divisional supply leader and other service unit staffs.

The three **infantry regiments** were of course the division's main fire and maneuver elements. They took and held ground. Normally two regiments would be deployed forward with one in reserve. However, owing to the extended frontages that divisions were required to hold on the Eastern Front it was not uncommon for all three regiments to be on the front line. When in the line two battalions would be forward and one in reserve. Again, there were instances in which all three battalions were placed in the line. In the sector that was least difficult to defend or which the enemy was least likely to attack a company might be detached from one of the battalions as a regimental reserve and the little pioneer platoon would also serve as a lean regimental reserve. Some regiments formed small pioneer companies. By 1944 many regiments had only two battalions. The "two up, one back" deployment concept was also applied at company level. The platoon in the rear though was considered to be in "support" of the forward platoons and not as a "reserve." Platoons, however, would place all three rifle squads in the line. In the early days when platoons had four rifle squads, one would be positioned to the rear in support. The battalion

machine gun company's three four-gun heavy machine gun platoons might each support a company but they were mainly used to place suppressive fire on battalion objectives, cover gaps between units, and protect exposed flanks. They would fire through gaps between attacking platoons. The machine gun company's 8cm mortar platoon would be in general support of the battalion, especially the main assault company.

The regimental infantry gun company with 7.5cm and 15cm guns, the "regimental commander's artillery," provided support to the assault battalions and in the defense covered enemy approach routes. Later in the war these were often replaced by 12cm heavy mortars. The regimental antitank company had three platoons each with three 3.7cm antitank guns. These guns were not all positioned along the front line, but some were placed in depth in twos and threes throughout the regimental sector. Later in the war some of these guns may have been substituted with 5cm antitank guns and by 1944 large numbers of 8.8cm Panzerschreck "bazookas" were being issued. The battalion light infantry columns and regimental trains were company-sized elements responsible for transporting unit ammunition, supplies and rations, and included service elements such as cooks and blacksmiths. This applied to similar service trains and columns in other divisional battalions.

On 15 October 1942 the infantry regiment was redesignated a 'grenadier regiment' (Grenadier-Regiment) for morale purposes. Grenadier units in the old Imperial Army had been considered elite units. The division was still designated "infantry." The grenadier regiment's battalions too were redesignated "grenadier," but the companies, platoons, and squads retained the designation "rifle" (Schützen).

The **artillery regiment** provided the division's heaviest firepower. The three light artillery battalions each had three four-gun batteries with 10.5cm field howitzers. A battalion would usually be placed in direct support of an infantry regiment, but it did not "belong" to the regiment. It could fire in support of other regiments. The heavy battalion had two batteries of 15cm field howitzers plus a battery of 10cm guns. The heavy howitzers fired general support missions usually at targets in the enemy rear. The long-range 10cm guns were used for counterbattery fire against enemy artillery. Some heavy battalions had to substitute 15cm howitzers for 10cm guns. Any attached artillery units might be under the control of the artillery regiment or they might be under the control of the divisional artillery officer and his staff.

The **reconnaissance battalion** was a lightly equipped and lightly armed unit reliant on its mobility to accomplish its mission. During an advance the company-size horse-mounted squadron deployed platoons to the flanks and ahead of the division, up to 20-30 kilometers forward under ideal circumstances. Seldom though could they be deployed so far ahead because of the proximity of the enemy. The cyclist squadron would deploy at shorter distances. The heavy squadron possessed two infantry guns, three antitank guns, and three light armored cars to support the reconnaissance platoons. This unit often proved inadequate for its mission and later on was increased in strength and provided with better mobility and more firepower. This included light cross-country vehicles like the Kübelwagen, motorcycles, and more armored scout cars. As the Germans switched over to the defensive the reconnaissance battalion was often employed as a divisional reserve, especially when infantry regiments had only two battalions and all three regiments had to be in the front line. Often within battered divisions on the Eastern Front the remnants of antitank and reconnaissance battalions were consolidated into a single battalion (Panzerjäger- und Aufklärungs-Abteilung) and sometimes designated mobile battalions (schnelle Abteilungen). Later still the reconnaissance battalion was reorganized as a 'fusilier battalion' (Füsiliert-Bataillon) and structured along the lines of a grenadier battalion. It served solely as a divisional reserve and exploitation unit.

The **antitank battalion** had three companies. Some of the guns might be positioned forward in the regimental lines and a few further ahead in the security zone, but most were positioned in depth and often on terrain blocking the route the enemy might take after achieving a breakthrough. Being motorized they were routinely positioned so they could quickly move to pre-selected blocking positions. The battalion was initially armed with 36 3.7cm antitank guns, but these began to be replaced by 5cm and 7.5cm guns in 1942. By 1944 a battalion typically had 20-22 7.5cm guns and 4-10 or more 5cm.

The **pioneer battalion** had a wide variety of missions, including breaching enemy obstacles and minefields, clearing booby traps and dud munitions, repairing roads and bridges, and clearing natural obstructions. They also crossed water obstacles with pontoon bridges, rafts, boats and ferries, supported infantry assaults with demolitions and flamethrowers, erected obstacles, emplaced minefields, cleared fields of fire, aided with camouflaging, and even fought as infantry. The one motorized company was normally attached to the infantry regiment tasked with the main attack or in the defense with the reserve regiment. The two horse-drawn companies supported the other regiments. The bridging column was

an equipment transport unit for pontoons, bridging trestles and other components, assault boats, and pneumatic rubber boats, and other equipment. The pioneer companies would actually provide the manpower to erect the bridges and construct ferries with the aid of the bridging column troops.

The **signals battalion** provided field telephone and radio communications support within the division, linking all subordinate units. Regiments and battalions had their own signals elements, but for internal communications. Telephone and radio troops, the former with switchboards, were detached to all divisional units and laid wire and cable for telephone connections. They also undertook the major task of maintaining the wire systems. Communications with corps headquarters was established by those headquarters' own signals units, which detached telephone and radio troops to the subordinate divisions and other corps units.

The **administrative service** was under the control of the divisional quartermaster officer on the divisional staff. The provisions office was responsible for the receipt and distribution of rations, forage, and commodities within the division. The bakery company provided bread, a major staple, to the division. The butcher platoon collected and butchered livestock to produce sausage and fresh meat. The field post officer distributed and forwarded mail.

The **divisional supply leader** was a small staff for overseeing supplies, ammunition, fuel, and materiel transportation and distribution. In practice the number of company-size truck and horse-drawn wagon supply columns assigned to a division varied in number depending on its missions, area of operations, and availability of transport. The supply company operated a depot and distribution point. The workshop company repaired vehicles, wagons, weapons, and other equipment.

The **medical service** theoretically operated two medical companies to support frontline units, though some divisions had only one company. Where there were two companies, one was motorized and the other horse-drawn. In the defense they operated the same, but in the offensive the motorized company would accompany the forward assault units. The two ambulance platoons were directly subordinate to the divisional medical officer and were committed to the sectors experiencing the severest action. The field hospital was established well to the division's rear. The most seriously wounded would be evacuated to corps-level hospitals.

The **veterinary company** treated the division's 5,000-6,000 draft and riding horses, an important task since the division was so reliant on horse transport. The platoon-size **field military police troop** was responsible for maintaining order and discipline, traffic control, and headquarters security.

As can be seen, the German infantry division, even with its late war changes and reductions in capabilities, was a complex, self-contained fighting force well designed for normal combat missions. It was the infantry division that bore much of the burden of the fighting on the Eastern Front and in all other theaters.



The seemingly never ending march forward, or to the rear, depending on the fortunes of war. Much of an infantry division rode in trucks, cars, wagons, and carts or on horses, bicycles, and motorcycles, but its 27 rifle companies walked.



The confusion of battle is demonstrated here on a road jammed with tanks, trucks, motorcycles, and bicycles as a unit fights its way into a defended town. The insignia of 97.Jäger-Division, a black feather on a white shield, can be seen on the left rear of the staff car in the center and on a motorcycle near the left edge.



A Feldwebel of the Feldgendarmarie directs a Bussing-NAG medium cargo truck through a battered town. Most Feldgendarmen were NCOs, many of whom had prior police service in one of the Reich's many police organizations. To the side of the street are the remains of a Soviet T-38 amphibious scout tank, armed with a single machine gun.



A pair of Feldgendarmen prepare to direct traffic through a Russian town. The standing Feldgendarm is an Oberschütze as indicated by the small four-point star on a circular backing on his left shoulder. The insignia is partly covered by the armband. The purpose of the armband, which does not appear to bear any inscription or markings, is undetermined. It may be a colored band identifying a specific unit to prevent drivers from being confused by other units' traffic controllers or it could be a green band used to identify auxiliary field police, although such bands were usually inscribed "Hilfsgendarmerie". The stylized cross unit insignia on the motorcycle is unidentified.



A unit advances with motorcycles, heavy cross-country cars, trailers, supply wagons, tracked vehicles and foot troops on dusty roads. Motorcyclists could carry a considerable amount of personal gear in the "saddlebags." They also carried motorcycle repair tools and cleaning gear.





Troops examine an abandoned Soviet BT-7 light tank that had become bogged down in a muddy field. Almost as many tanks were lost to this cause as by gunfire buy both sides. Of course many of the mired tanks were shot up anyway after they were abandoned. This one, armed with a 45mm gun, appears to have been spared and might eventually see German service for rear area security.



Along with other troops a Panzer Unteroffizier examines a KV-2 heavy tank or "artillery tank." No doubt he is practically interested in this formidable monster. Though its 110mm armor made it difficult to kill, the exceedingly high turret made an excellent target. Most were lost early in the invasion. This turret was mounted on a KV-1 chassis. The 334 KV-2s were intended as infantry support assault guns for destroying bunkers and were usually armed with a 152mm gun, though some had a 122mm. A few were employed by the Germans.



This completely burned out Soviet BA-3 armored car is being examined by infantrymen. The BA-3 was armed with a 45mm gun and 7.62mm DT coaxial machine gun in the turret of a T-26 tank. It was built on a GAZ-AAA truck chassis. There was no power to the front wheels. To improve mobility on soft ground comparatively lightweight tracks could be fitted to the two pairs of rear tires. These are seen stowed on the rear hull.

A motorized rifle unit advances on the steppe. The vehicles bear the white "K" of Panzer Group (Panzergruppe) von Kleist. In the foreground the crew of a 3.7cm Pak 35/36 antitank gun wheels their weapon forward. Normally towed by a field car, it could be manhandled forward to put into immediate action. The field car would follow to the rear in case it was needed to move the gun rapidly elsewhere.

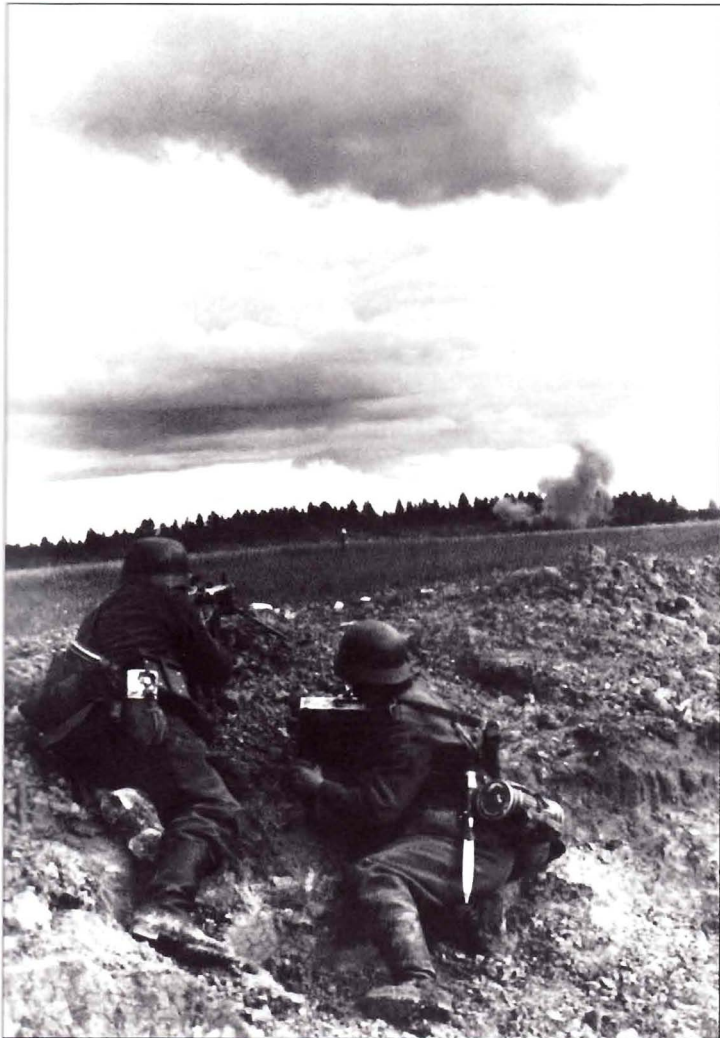




The machine gunner was an important member of the rifle squad and was nicknamed the "Trigger" (Abzug), as in triggerman. The assistant gunner, the Number 2, was known as the Zwo (corruption of zwei—Two). He can be seen to the right of the gunner carrying a 300-round cartridge case (Patronenkasten 34). The machine gun was the squad's primary means of combat; the rifleman supported the machine gun. In many other arms the rifles were considered the squad's or section's primary arm and their light machine gun and automatic rifle provided supporting fire.



Besides the rifle squad's three-man machine gun troop, the squad consisted of a squad leader (Gruppenführer) and a rifle troop (Schützen-Trupp) led by the assistant squad leader (stellvertretender Gruppenführer) who doubled as the troop leader (Truppführer) of the rifle troop, the squad's five riflemen (Schützen). Here a squad's machine gunner carries an MG34 fitted with a 50-round basket magazine (Gurttrommel 34) containing a 50-round belt (Zwischenstück).



A 7.92mm MG34-armed light machine gun troop sprays a distant woodland as it is also pounded by 8cm mortars. Each rifle squad (Schützen-Gruppe) was armed with a light machine gun—later in the war often two. The Maschinengewehr-Trupp consisted of a machine gunner (Number 1) and two machine gun riflemen (Numbers 2 and 3) to carry ammunition, here in a Patronenkasten 34. Little in the way of accessories was carried by light machine gun troops. The replacement parts pouch (Ersatzstücketasche 34) and two single-barrel spare barrel carriers (Laufbehälter 34) can be seen here, partly covered by the gunner's water bottle cup; one seen slung here on the assistant's back above his bayonet and gasmask carrier.



A motorized artillery unit with its generous allocation of motor transport crosses the steppes. Divisional artillery units were horse-drawn as were many corps and army artillery units, but some were provided motor transport to allow them to be moved rapidly about the battlefield to be employed where needed. The vehicles are mostly heavy cross-country cars, the Kfz 21. Summer 1941.



It was not long after the invasion that the Germans began employing former Soviet troops in security units to help protect against increasing partisan attacks on the fragile lines of communications. These Sicherungstruppen wear former Soviet uniforms with German M1916 steel helmets. While such Eastern Troops (Osttruppen) mostly used Soviet uniforms, weapons, and equipment, it was felt important to provide them with helmets of the distinctive German "coal scuttle" design to prevent them from being mistaken for the enemy.



Heavily loaded infantrymen passing through a Russian village fill their water bottles at a hand-cranked communal cistern. In the Soviet Union the latter was a modern appliance. In forward areas water was supplied to troops using 20-liter (5.05-gallon) water cans (Wasserkanister).



Troops are served their meal from insulated food chests by company mess personnel. Soups or stews, potatoes, and bread constituted most supper meals. Sausage and bread were often served for breakfast and dinner. The company cook (Koch) were known to the Landsers as a kitchen bull (Küchenbulle).



A rifle squad rushes up a street during the lengthy process of clearing a town. Troops of course sought any enemy forces, but were also on the lookout for abandoned weapons, vehicles (including civilian), equipment, and supplies. The machine gun troop is well forward as was standard, although they would not normally be so far ahead of the squad's main body. Standard tactics called for the machine gun troop to be forward so that when engaged it would immediately place a high volume of fire on the enemy and the riflemen would move up and position themselves on either side of the machine gun. An alternative maneuver was for the rifle troop to move to one flank or the other to attack the enemy from an unexpected direction while the machine gun troop pinned the enemy down.



A cavalry unit moves down a Russian road. The long leather case on the right side may be radio antenna sections. While mounted troops were largely obsolete in modern warfare, the USSR's vastness and rugged terrain provided ample opportunities for their continued employment. Note that the riders' steel helmets are fastened to the rear side of their army saddles (Armeesattel 25).

A motorcycle unit loaded aboard rail flatcars. While motorcycles had proved their value in Western Europe, they were not always effective on the Eastern Front. The spring and fall rains immobilized them as did the winter snows and subzero temperatures. Many motorcycle units parked their Kräder and went to snow skis or simply foot (snowshoe) operations.



Owing to the limited amount of individual equipment lying in front of the position these appear to be service troops. They have created a dugout shelter (Unterschlupfe) under a burned out Soviet 45mm gun-armed BT-5 fast tank. The Landser called this a "dwelling bunker" (Wohnbunker) or a "small house" (kleines Haus). Such bunkers would be made as comfortable as possible with straw or evergreen boughs covering the floor. Candles or soldier-fabricated lamps were used for light.



Soldiers tend to collect pets as a link to a kinder past. Here the crew of an SdKfz 263 armored radio car (Panzerfunkwagen) plays with their mascot. The vehicle belongs to the signals battalion of Division "Großdeutschland", signified by the rectangular tactical system with a projection in the side. The white helmet identified the division. This armored car mounted a single MG34 machine gun in the upper hull superstructure, which can be seen behind the pup's head. There was another version, the SdKfz 232, with a rotating turret mounting a 2cm automatic cannon and a machine gun. Assault gun crews normally wore this field gray version of the black Panzer uniform. The collar tabs are black, but the Waffenfarbe cannot be determined. It is probably the lemon yellow of the signals troops. This vehicle had a crew of five.



A column passes through a stretch of road littered with blasted vehicles. These have been pushed to the shoulders to allow the advance to continue. An on-coming solo motorcycle passes a combination motorcycle with sidecar.



A combination motorcycle passes a burning BT-5.



Infantrymen examine a destroyed tank that is still burning.



A burning T-60 light scout tank. This little tank was armed with a 20mm automatic cannon and had a two-man crew. Unlike most infantry scout tanks, the T-60 was not amphibious.



Couriers used not only motorcycles but also horses, as did some reconnaissance units. However, many horses died in the course of the brutal Russian winter, sometimes shot for food owing to short rations. In the background burns a BT-7 fast tank. Sometimes the Soviets burned tires or black smoke grenades beside a tank to make it appear to have been knocked out. This has not happened here.



Assault pioneers attack a Soviet fortification on the Moscow Line. Pioneer troops (Pioniertruppen) were mainly employed as assault troops to augment the infantry. They cleared minefields and booby traps, breached obstacles, and attacked fortifications with demolitions and flamethrowers. Here a Pioneer advances over heavily shelled ground with a *Flammenwerfer 35*. This 35.8-kilogram (79-pound) flamethrower had a range of 25-30 meters and flame duration of about 10 seconds with its 11.8 liters (3.11 gallons) of fuel oil. The smaller tank to the left of the fuel tank contains the compressed nitrogen propellant.



This KV-1 never made it to the front. This is probably a posed photograph. The troops carry no combat equipment.



This artillery unit (signified by the white artillery tactical symbol) has mounted an MG34 machine gun on a caisson for antiaircraft protection. This may be the two-caisson-type communications wagon provided to artillery batteries. Artillery caissons and gun limbers had over-the-wheel fenders, which these wagons lack. Note the brown leather M1934 saddle bag on the horse to the right.



The crew of a Soviet 47mm M1930 antitank gun pose beside their truck-drawn weapon. The Germans captured and employed large number of these weapons along with the longer barreled M1937, which they called the 4.5cm Pak 184(r) and Pak 184/1(r), respectively. While of larger caliber, the design was based on the German 3.7cm Pak 35/36. The Soviets choose the larger caliber more for providing an effective high-explosive round than as a better antitank weapon. The approach of cold weather is apparent. The German winter field uniform and added cold weather items were entirely inadequate for the Russian winter about to be inflicted on the Landser. Early winter 1941.

A heavily shelled and bomb-blasted area is littered with the hulks of Valentine Mk III infantry tanks armed with 2 pounder (40mm) guns and supplied through British Lend-Lease.



Troops moving to the front take a rest break, called a Feuerpause (firebreak). This was the formal term for "cease-fire," but also signified a rest break. The vehicle in the right foreground is a Krupp L2H43 Kfz 70 Mannschaftswagen (troop carrier). This was used extensively by motorized infantry units and could mount a light machine gun on a pedestal in the forward portion of the troop compartment. There were also adapted versions for towing the 3.7cm antitank gun (Kfz 69) and 2cm Flak pieces (Kfz 81).



A heavy machine gun troop poses beside their 7.92mm MG34. The white infantry Waffenfarbe edging their shoulder straps is evident. A heavy machine gun troop comprised a gun leader (Gewehrführer), machine gunner (Maschinengewehr-Richtschütze), and four or five machine gun riflemen (Maschinengewehr-Schützen) to carry ammunition and gun equipment. A heavy machine gun troop was provided with a tripod mount (Lafette 34) with a pair of leather carrying slings (Trageriemen), long-range optical sight (Zieleinrichtung 34), a couple of two-barrel spare barrel carriers (Laufbehälter 34), belt filling device (Gurtfüller 34), and several 300-round metal cartridge cases (Patronenkasten 34 or 41) plus spare parts, tools, and cleaning equipment.



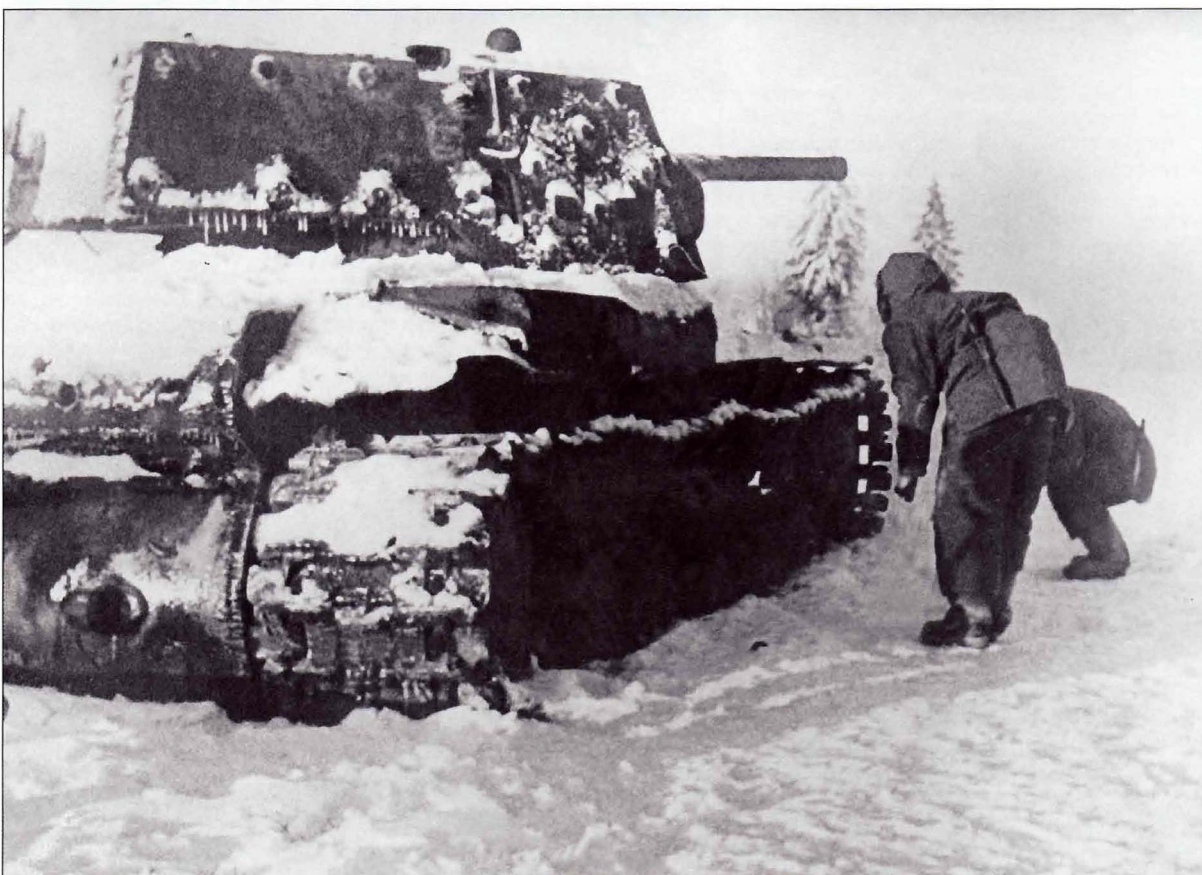
A three-man light machine gun troop poses with their Unteroffizier squad leader (second from the left with the NCO collar braid) and Gefreiter rifle troop leader (far right). Note that the machine gunner (center) and rifle troop leader wear the much valued felt winter boots. In the German Army the terms light and heavy machine gun, did not differentiate the weight; the MG34 and later the MG42 were used in the same role. The "heavy machine gun" provided sustained long-range direct and indirect fire support to rifle companies. They were fired from stable tripods, but could be shoulder-fired or fired from the bipod if necessary. The "light machine gun" was shoulder and bipod-fired and provided direct fire support to the rifle squad. The terms identified role, not actual weight. The Patronenkasten 34 ammunition box can be identified by its angled lid while Patronenkasten 41 had straight lid edges.



Besides the antiaircraft adapter for the MG34's bipod mount, there was also a special antiaircraft mount available to support units lacking the expensive heavy machine gun tripod. Support units were issued light machine guns for self-defense and a low-cost lighter weight antiaircraft tripod (Dreibein 34) was provided. Note the antiaircraft ring sight fitted over the forward sling swivel. Because of its high center of gravity if used against ground targets the mount was less than stable. It would be better to dismount the weapon and fire it from the bipod. The bipod is in the lowered position as its legs help radiate barrel heat.



This scorched KV-1 has been partly dug-in, but this effort did not protect it. The small "doom" on the rear of the turret is a mounting for a 7.62mm DT machine gun.



A 1940 KV-1E tank with "ekranami" add-on turret armor.



Infantrymen outfitted in snow coveralls (Schneetarnüberzüge) stand beside a BT-7 light tank.



A patrol prepares to venture out from an occupied village. They wear locally made snow coveralls (Schnee-Tarnung Überzug) with whitewashed helmets. Note the waist-level slits that allow access to cartridge pouches and greatcoat pockets. The colored arm strips, usually black or white, were meant to be for friend-or-foe recognition, but in this instance they may serve only to identify leaders. A significant number of the troops carry machine gun ammunition cans.



The ingenuity of infantrymen was unceasing. Here a machine gunner uses a liberated milk-can cart to carry his MG34, five cartridge cases, and a spare barrel carrier laid crossways behind the wheels. The ammunition cases are secured in-place by a heavy duty web hauling sling (Schleppriemen). The metal ammunition cans (Patronenkasten 34) held either six 50-round belts linked together or a 250-round belt. Belts were issued as machine gun equipment and were not discarded once emptied, but recovered, refilled, and reused. They became a valuable commodity in combat and replacements were scarce. Spring 1942.

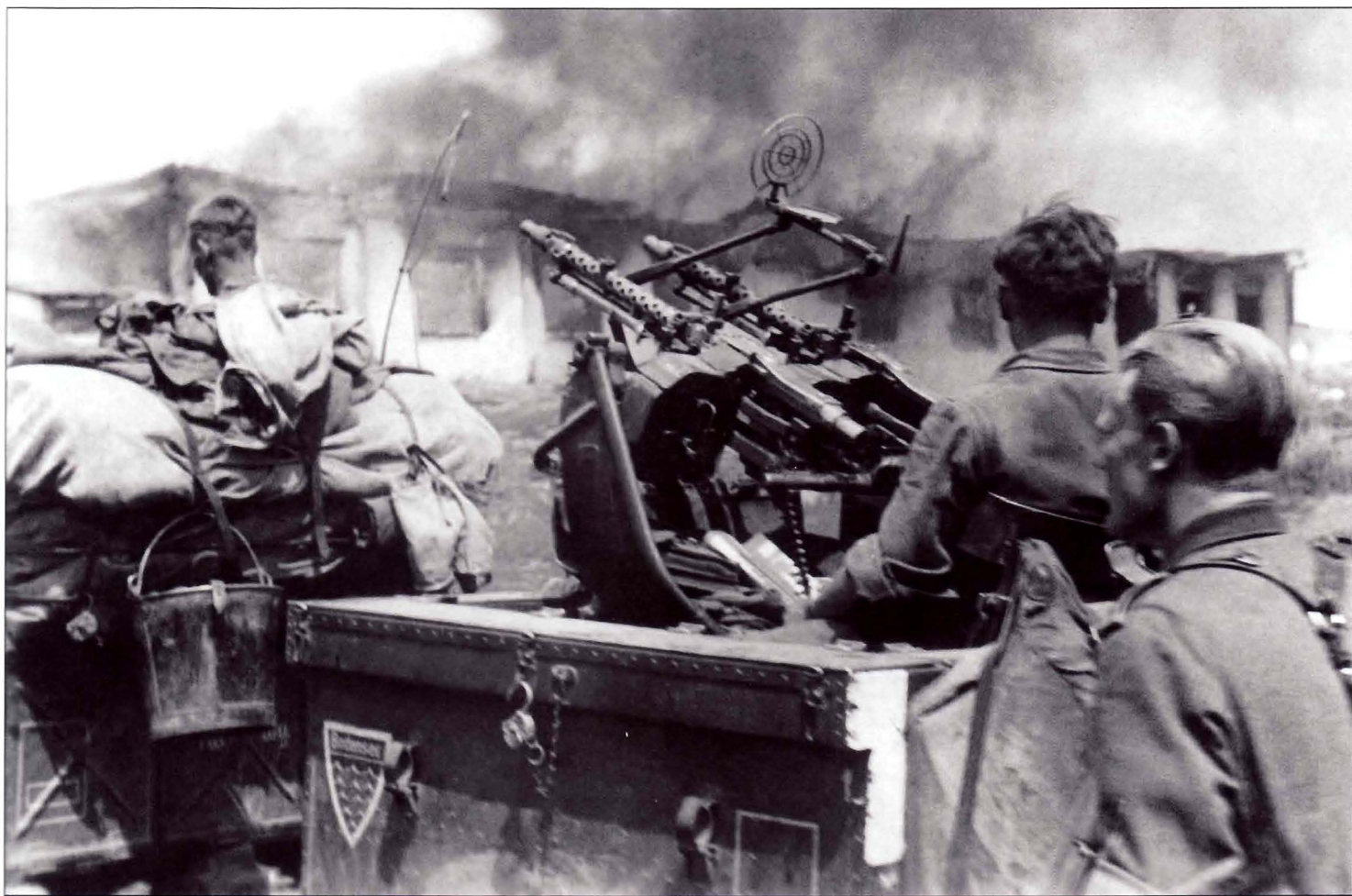


Waffen-SS soldiers examine an unidentified piece of Soviet light artillery. Gray SS runes can be seen on some of their black right collar patches.



A motorcycle unit passes through a burned out city. There were two types of motorcycle units, reconnaissance and motorcycle rifle. The latter were mostly converted to reconnaissance by 1943. One of the most valuable and widespread uses of motorcycles though was by couriers. They carried information that could not be transmitted by radio, telephone, or telegraph from headquarters to headquarters: written orders, annotated maps and overlays, directives, and mail.

A rifle squad takes a Feuerpause. The MG34 has a 50-round basket drum magazine fitted. The Number 2 assistant gunner carried four basket magazines in a metal carrier (Gurttrommelträger 34) and a cartridge case while the Number 3 carried two cartridge cases (here Patronenkästen 34). Both the Numbers 2 and 3 carried a spare barrel. The white undershirt is apparent on the machine gunner. The tunic sleeve was usually rolled up in such a manner that the conspicuous white shirt sleeve could not be seen. Summer 1942.



A unit passes through a burning village. This is a steel-bodied twin machine gun wagon (Maschinengewehr-Doppelwagen 36). The wagon could be towed by a light field car or, with the addition of a single-axle limber (Vorwärtswagen), drawn by two horses. The MG34s could be dismounted and fired from their integral bipods or from tripod mounts, which were carried in the limber or car along with reserve ammunition, spare barrels, and other equipment. The entire Zwillinglafette 36 twin gun mounting with its pedestal, integral 150-round ammunition containers (Patronenkästen 36), and gunner's seat could be removed from the wagon and installed in a ground position. Note that the butt stocks are removed from the guns when fitted to this mount. One such wagon was provided to each two-gun heavy machine gun group in battalion machine gun companies—six per company. These became scarce later in the war, after production had halted. Summer 1942.



A light machine gun troop (MG-Trupp) fires through a gap in the barbed wire at what appears to be a casemated fortified position. The rest of the squad, the rifle troop, is maneuvering to an advantageous attack position to the flank. While the squad's machine gun troop was ideally a three-man crew casualties commonly reduced it to just two men.



A heavy machine gun troop moves forward. This crewman carries the folded tripod mount by its double slings. On his belt is seen a canvas cleaning tools pouch. An adapter rod was issued that fitted to the tripod allowing the machine gun to be used as an anti-aircraft weapon. Heavy machine guns were found in the three platoons of the grenadier battalion's machine gun company, along with an 8cm mortar platoon. Each platoon had four machine guns organized into two two-gun groups. Each rifle company also had a two-gun heavy machine gun squad, but this was often lacking owing to manpower shortages.



A Gebirgsjäger Gefreiter demonstrates to a group of officers and NCOs a method of wrapping boots with burlap cloth to provide additional protection from the cold in sub-freezing weather. Such a technique would be ineffective and even harmful in above freezing weather if it was wet. Leather by itself provides no insulation from the cold. On the Gefreiter's left breast pocket is the Heeresbergführer (Army Mountain Leader) badge. The award of this badge required one-year of practical experience as a mountain guide and a demonstrated proficiency in climbing and survival skills.

A Gebirgsjäger (mountain infantry) MG34 machine gun troop fires short bursts at enemy soldiers moving up the far side of a valley. The Obergefreiter spotter is using the 6x30 binoculars issued to the squad and usually carried by the squad leader. Officially designated Doppelfernrohr or Fernglass, binoculars were commonly called a Dienstglass (service glass). The same man's cleated mountain boots and traditional puttees can be seen.





A Leutnant and NCOs pore over maps in an attempt to determine their precise locations. Inside the USSR the German Army was plagued by inadequate maps. The available maps were often outdated or of poor quality. Captured Soviet maps were highly valued and the Germans reprinted them with overprinted German topographic symbols, place names, and updated features. The hooded cover forward of the unit pennant staff is a Notek blackout driving light. Triangular pennants usually identified brigade-level commands. The metal pennants had three horizontal bars with the center one in the unit's Waffenfarbe (arm of service color), here an unidentified dark color. The partly hidden Wehrmacht eagle pennant on the right fender was displayed on staff cars carrying officers. The vehicle is a Horch Kfz15 staff car, a common type.

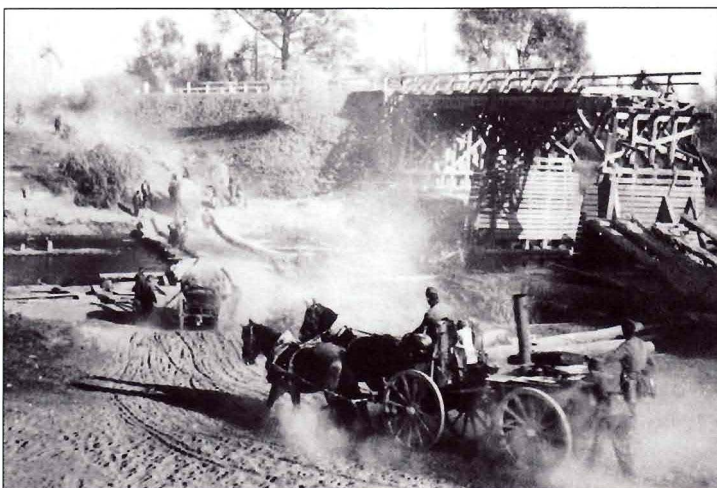


This staff car, an Opel Super Sechs, belongs to an artillery regiment headquarters as indicated by the white rectangle with an artillery tactical symbol and an "R." Motorized artillery units were usually issued standard vehicles, but horse-drawn units were augmented with a few commandeered civilian vehicles. A courier's motorcycle is seen in the left background. Forward observers and snipers were often alerted to the presence of even a well-camouflaged command post by the frequent comings and goings of couriers.

A rear service unit butchers a hog in a farmyard. Fresh and preserved meats were supplied through normal channels, but units augmented their supply whenever possible. Often livestock was herded on the hoof by butcher platoons to use when necessary. The soldier to the right with his back to the camera shows the integral hooks fitted in the back of his tunic and used for supporting belt equipment. The front support hooks can be seen on the waist of the tunic of the soldier to the left.



Two NCOs (Unteroffizier and Feldwebel) of an artillery battery use a 6x30 Sf.14Z scissors periscope (Scherenferrohr) to search for, detect, plot, and determine the azimuth (direction) to targets. Usually the battery chief (Batteriechef) operated the observation post, but he could not be there all the time. Note the small tree limb attached to the other periscope, thus providing just enough camouflage to break up its shape.



As pioneers rebuild a destroyed bridge, a unit supply train bypasses it on a temporary plank bridge. An Hf 12 small field kitchen wagon (Feldküchenwagen) is to the right. These could operate on the move, cooking soups, stews, and coffee. The limber carried cooking utensils and equipment. The troops called it a Gulaschkanone (goulash cannon) or a Futterkanone (fodder cannon).





Waffen-SS officers bedecked with a variety of decorations. An individual so adorned was referred to as a ribbon-dealer (Bandhändler), reminiscent of the old practice of actual ribbon dealers displaying samples pinned on their coats. The officer to the left, a Knight's Cross bearer, is an SS-Obersturmbannführer (equivalent to a Heeres Oberstleutnant). The center officer is a Hauptsturmführer (equivalent to a Heeres Hauptmann) and the one to the left an Untersturmführer (equivalent to a Heeres Leutnant).

A motorcycle reconnaissance unit consumes a meal, probably of stew or soup from their mess kits (Kochgeschirr 31). The two-piece mess kit consisted of a 1.7-liter (approximately 57-ounce) cook pot with a wire pail handle and a lid with a folding handle that served as an eating or cooking pan. Mess kits were painted dark gray prior to April 1941 and then olive green.



Krupp L2H43 Kfz 70 troop carrier trucks are loaded aboard rail flatcars for movement to a different sector of the front. Rail was the primary means of long-distance unit movement and units became adept at rigging loads on rail cars.



German troops examine a timber bridge unable to bear the weight of a Soviet KV-1 tank. The crew in all probability survived the collapse. The soldier to the right is armed with a 9mm MP40 machine pistol and a pistol, probably a 9mm Walther P38.

A 3.7cm Pak 35/36 antitank gun is concealed among destroyed KV-1 tanks. The hulk also offers cover to duck behind if fire is returned.





Pioneer troops pause to examine a submerged KV-1 tank as they reconnoiter for a bridge crossing site with the aid of a 5.5-meter (18-foot) medium pneumatic boat. Such boats could carry over a dozen troops. Each boat required a minimum of six paddlers and a steersman. The tank had probably been knocked out or simply mired and abandoned while crossing the stream in summer, when the water was significantly lower.



A grenadier company moves towards the front. The company chief (Kompanie-Chef), usually an Oberleutnant or Hauptmann, was provided with a riding horse. On 15 October 1942 Infanterie-Regimenter were redesignated Grenadier-Regimenter and individual Schützen were redesignated Grenadiere. This was an effort to improve the morale of infantrymen as in the old Imperial Army grenadier units were considered elite. Only a small portion of a division's service and support units are seen in the background.

Unterfeldwebel (Panzerjäger Bataillon) 73.Infanterie-Division, Caucasus August 1942

Inherent to all infantry divisions was the 'Panzerjäger-Abteilung' (antitank battalion). It was the only fully motorized unit in the division. Additionally each infantry regiment had its own Panzerjäger company or platoon. The Panzerjäger 'Waffenfarbe' was rose pink (rosa), seen here as a soutache around the national cockade on this Panzerjäger's M34 field cap and on the edging of his shoulder straps. The 'Panzertruppen' also used the Rose Pink branch color.

This sergeant wears the standard army uniform of the period, an M34 field cap and M36 field blouse with its distinctive dark-green facing collar and shoulder straps. The M36 field blouse marked him out as an 'old campaigner' by 1942.

The M40 with its field-gray collar (and to a lesser extent M41 field blouse) was now regular issue. Displayed on his blouse are the Iron Cross 2nd class ribbon and the General Assault Badge. His service trousers are the M40 type made in field-gray wool and tucked into a pair of marching boots. The M35 steel helmet has a cut-down rubber inner tube affixed to hold foliage (a common method of helmet camouflage).

The Panzerjäger NCO equipment consists of: enlisted man's army leather belt, a pair of MP38/40 magazine pouches, M1939 infantry support straps, 6x30 field binoculars, M1931 bread bag, M1931 field flask with drinking cup, S84/98 bayonet with leather frog, army shelter quarter (Zeltbahn 31) and M1938 gasmask in its metal canister. Due to shortages of the MP40 in the early war period this NCO has retained a 9mm MP34 (Ö). Austrian sub-machine gun stocks were taken into German service after its annexation in 1938.



Obergefreiter, 122.Infanterie-Division Demyansk, Winter 1942/43



Snow camouflage smocks and coveralls were originally used by Ski and Mountain troops before the war. During the snow winter months on the Eastern Front white camouflage was a necessity. The field army's early attempts in 1941-42 were of the improvised sort, mainly cut-up white linen bed sheets. The first manufactured white camouflage clothing for the field army was a collarless snow shirt, which was tight fitting and impractical in combat. By 1942 a more practical loose-fitting snow coverall was designed to wear over many layers of clothing, including a greatcoat. It was similar to the pre-war Gebirgsjäger snow coverall, made of a light fabric, mid-calf length. It had a wind collar and hood, five-button front, sleeve tightening straps and two vertical access slits. In certain cases front-line troops cut it down to a more practical mid-high length. In late 1942 another economically manufactured hooded coverall was also issued, but without the wind collar and the sleeve straps.

This infantryman has fortunately been given a snow coverall and a pair of felt and leather winter boots. Underneath his coverall he wears several layers of clothing including the M40 service uniform and an M40 greatcoat outermost. Thick woollen gloves are worn and a woollen toque for his head. His M35 steel helmet has been painted with whitewash.

His equipment is: the enlisted man's army leather belt, a pair of rifle ammunition pouches, M1931 bread bag, M1931 field flask with drinking cup, M1931 mess kit, S84/98 bayonet with leather frog, small entrenching tool and, slung across his shoulder, a leather grenade launcher pouch. He is issued with the Karabiner 98k rifle with grenade launcher and range sight attached. At his feet are special carrying bags for the rifle grenade ammunition.

Unteroffizier (Panzergrenadier) 9.Panzer-Division, Orel, July 1943

The army was slow in the development of camouflage clothing. It was not until spring 1942 that the first camouflage clothing appeared. The first type smocks and helmet covers utilized the M31 splinter camouflage pattern, copied from the army shelter quarter (Zeltbahn 31). The army never produced the quantity required to equip its front line troops, and to the scale of manufacture which the Waffen-SS accomplished. Limited numbers meant that priority issue went to specialised army troops: firstly snipers, raiding party/reconnaissance units and finally Panzergrenadier formations, though even in this armed branch, supply was never guaranteed. Due to these shortages some individuals would use Zeltbahn material to make their own field-made camouflage clothing.

This Panzergrenadier NCO has been issued the Heer summer camouflage uniform consisting of the helmet cover over an M35 steel helmet and lightweight smock. The army 1st pattern camouflage smock was similar in design to the M40 Waffen-SS smock in certain aspects: a loose fitting collarless pullover without pockets, a drawstring front closer and two vertical access slits. Under his smock he wears an M40 field blouse with the (all branches of service) M38 'Litzen' collar patches and subdued NCOs' light gray Tresse. The service trousers are the M42 'Keilhose' pattern and his footwear a pair of M39 short shaft marching boots.

Equipment items are: the enlisted man's army leather belt, a Russian drum magazine pouch, M1935 dispatch/map case, tan painted 6x30 field binoculars, M1931 bread bag, M1931 field flask with drinking cup, M1931 mess kit, S84/98 bayonet with leather frog and small entrenching tool. His weapons consist of an M24 stick grenade and a captured Russian PPSH-41 sub-machine gun.



Grenadier, 31.Volksgrenadier-Division Kurland, October 1944



This figure demonstrates the general appearance of the army infantryman in late 1944. His field uniform is the M1943 pattern; the standard field cap (Einheitsfeldmütze), field blouse (Feldbluse) and belted trousers (Rundbundhosen). Canvas gaiters with lace-up ankle boots were standard issue with this uniform and his steel helmet is the M1942 type (by late 1943 the helmet was manufactured without a decal).

Over this field uniform is a multi-purpose army shelter quarter (Zeltbahn 31) worn here as a camouflage garment. This was the only camouflage clothing generally issued to an infantryman. Moreover it was the most common camouflage item used by the German army. Designed as a waterproof poncho that could be buttoned in various combinations for maximum protection and freedom of movement, it was also used as a part of a tent system, with other shelter quarters buttoned together. Having an effective splinter pattern widened its purpose as a camouflage sheet, used draped over vehicles and field trenches. Both sides of the Zeltbahn were in splinter camouflage; one side was printed darker than the other in order to blend in with any terrain.

The standard infantryman's equipment is worn; the enlisted man's army leather belt, M1941 infantry support straps, a pair of rifle ammunition pouches, M1931 bread bag, M1931 field flask with a small bakelite cup, M1931 mess kit, S84/98 bayonet with leather frog, the folding shovel and M1938 gasmask in its metal canister.

He is holding a Panzerfaust 30. Slung over his shoulder is the (mid-war production) Karabiner 98k rifle. Even by the late war period this rifle would be the main weapon issued to grenadiers. Attached to one of his rifle pouches is an M1939 egg grenade.

A radio communications van set up in the arid southern USSR where cactus is prevalent. The cut of the uniforms indicates that this may be a Luftwaffe unit. The Luftwaffe tropical uniform had baggy trousers and was issued in North Africa, Sicily, Italy, Greece, the southern USSR, and other regions with a hot climate. It was a sand-colored outfit while the Heer used a reed green tropical uniform.



An MG34 troop stays alert at a small railroad station. With its high rate of fire its barrel was to be changed after every 300 rounds of sustained fire. It is considered the first "universal" machine gun, being employed in the light and heavy roles, as an anti-aircraft weapon, and mounted in and on armored fighting vehicles. As a light machine gun, as seen here, it weighed 11.5 kilograms (25 pounds). While 5.5 pounds heavier than the American squad automatic weapon, the .30-caliber M1918A2 Browning automatic rifle (BAR), it offered longer range, a quick-change barrel allowing sustained fire, and was belt-fed rather than being limited to a 20-round magazine. The Soviet squad automatic weapon, the 7.62mm DP was over a pound heavier than the MG34, lacked a quick-change barrel, and had a 47-round drum magazine.

Soviet prisoners are collected beside an abandoned 45mm M1937 antitank gun. This and the very similar 45mm M1932 were pressed into German service as the 4.5cm Pak 184/1(r) and 184(r), respectively. The German guards are armed with the 7.9mm Mauser Kar98b carbine, a modernized Gew98 rifle from World War I. Even though designated a "carbine" it was still a rifle-length weapon. It was used by many second-line units.



An NCO checks on a lookout posted in a tree. Such platforms erected high in trees served as lookout posts, air defense warning posts, artillery ranging posts, and signal light relay stations.



Luftwaffe 8.8cm Flak 18 crew watches as staff officers discuss unit dispositions. The gun is well camouflaged and the limbs can be quickly pulled away when an air alert is given. Even the gun mount is camouflaged with straw as are the ammunition crates to the right and the crew tent shelters to the left.



A rifle platoon (Schützen-Zug) moves through the company rear area. With light equipment and carrying bedrolls they may be just bedding down for the night. Note the partly camouflaged infantry cart packed to the right and draft horses to the left. A rifle company (Schützen-Kompanie) might have 10 to 12 wagons and carts and 16 to 20 draft horses. Fall 1942.



A patrol moves through a swamp following an animal trail, a practice used by both sides. The squad is loaded down with machine gun ammunition. The lead man carries a 30-round cartridge case with an attached web carrying sling while others have belts draped over their shoulders. Note that the bullets are carried facing out so they will not dig into the neck. The lead man wears a mosquito head net, a necessary item in the spring and fall. At times dense clouds of mosquitoes and flies could be maddening. His tunic skirt pockets probably contain rations to be consumed on the patrol. Fall 1942.



A machine gun troop inspects a house, perhaps considering its merits for the night's quarters. The machine gunner carries full equipment, which would consist of a bread bag, water bottle with cup, mess kit, gasmask carrier, entrenching tool, bayonet, gas protection sheet, combat pack, and shelter-quarter. Note that the assistant gunner wears low shoes and puttees, common at this time. Fall 1942.



The Waffen-SS made wider use of camouflage uniform items than the Heer. The SS-Untersturmführer (equivalent to a Heeres Leutnant) to the right wears a coverall in one of the many spring camouflage patterns and is probably a tanker or assault gun crewman. The conspicuous black uniform was not conducive to dismounting and conducting ground reconnaissance prior to positioning an armored fighting vehicle. The second man from the right is a SS-Obersturmführer (equivalent to a Heeres Oberleutnant). The man in the center, an SS-Standartenführer (equivalent to a Heeres Oberst), wears a custom-made greatcoat fabricated from camouflage shelter-quarter fabric. Two more senior officers clad in standard greatcoats stand to the left. Waffen-SS general equivalent officers did not wear red or any other color of greatcoat lapel facings as did Heer general officers.



A Feldgendarmerie Unteroffizier guards Soviet prisoners, some of whom are women. Contrary to popular conception, there were no all-female ground combat units. Women served as snipers, there were some female antiaircraft units, and a few individuals actually fought attached to ground combat units, but there were no female infantry units. Women mainly performed medical duties, served as signalers, traffic controllers, and in administrative positions.



A Radfahrer-Gruppe (cyclist squad) prepares to depart for a patrol. They are equipped with Truppenfahrrädern 38 (troop bicycles 1938). They wear their shelter-quarters as rain capes with their carbines slung across their backs as was standard for bicycle riding. Most have camouflage nets on their helmets. Besides the issue Truppenfahrrad, all types of civilian bicycles were commandeered.



A commandeered civilian wagon and its draft horses struggle through mud. Heavy German vehicle traffic turned dirt roads that could support normal traffic into quagmires in no time. German military wagons had front and back wheels of the same size to accommodate repairs. Civilian wagons usually had smaller front wheels.

It is often forgotten that the Germans were not alone on the Eastern Front. Finnish, Hungarian, Bulgarian, and Italian troops fought and suffered there alongside the Germans. Here Hungarian troops load trucks for movement to the front. Royal Hungarian Army uniforms were a deep brown with tan shirts. The Hungarians used a short Mannlicher rifle in two calibers, the 8mm 35M and the 7.9mm 43M plus. The standard light machine guns, vaguely similar in appearance to the MG34, were the 8mm 31M and 7.9mm 43M. Hungary adopted the German 7.9mm cartridge in 1943 and began converting rifles and machine guns to that caliber. From 1940 the 35M was produced in large numbers for Germany in 7.9mm as the Gew98/40.



A 10.5cm howitzer's caisson and limber struggle across a rain-swollen stream. Each artillery piece with its own limber was accompanied by a caisson with additional ammunition and equipment. Between the artillery piece and caisson a single gun required 12 draft horses while the howitzer was serviced by only a nine-man crew. The artillerymen wear their shelter-quarters (Zeltbahnen) as rain garments. The Rasputitza, the Russian autumn rains began in mid-September. Rasputitza is Russian for "big mud."



A Waffen-SS telephone post situated under a rock ledge. The two signalmen, nicknamed line-pluggers (Strippenzieher), wear the special Waffen-SS winter insulated suit. The reversible suits were white on one side and field gray on the other and had a fur-lined hood. They operate a Feldfernsprecher 33, the standard field telephone. The man speaking on the phone is sitting atop a wire dispensing reel.



A squad leader surveys Soviet positions in the distance from a position that his unit had recently captured. They wear the new reversible insulated winter uniform with whitewashed steel helmets. The popular uniform was white on one side, with light gray or four-color camouflage on the other. The bulky jacket was designed to be worn over combat equipment to protect ammunition, water bottles, and gasmasks from freezing. However, more often the equipment was worn over the jacket to allow immediate access to critical items. Note the colored friend-or-foe recognition bands on their arms. These did not encircle the arm, but were stripes with button holes on each end matching buttons sewn on the sleeve.



A Landser peers skyward hoping for a break in the weather to allow air support. He wears a civilian scarf and unofficial white knit cap beneath his anorak hood. Anorak windbreaker jackets were usually field gray or some lighter green shade. This one appears to be white. He also wears an insulated winter jacket, white side out. Winter 1942/43.



An artillery survey crew operates an Rkr 31 aiming circle (Richtkreis) while setting up an artillery battery. The aiming circle was used to measure vertical and horizontal angles as well as take magnetic bearings like a compass. It was used to setup aiming stakes for each of an artillery battery's four pieces allowing them to be aimed in the same direction even though separated by 30 to 50 meters.



Soldiers fill 20-liter (5.05-gallon) fuel cans (Benzinkanister). These robust fuel and water cans, collectively called Wehrmachtskanister (Defense Forces containers), were introduced in 1937 and copied from an Italian design. The German cans were in turn copied by the US and Britain, which called them "Jerry" or "blitz" cans. A special motor fuel (Winterkraftstoff) was used on the Eastern Front in the winter. This was gasoline produced with a different formula to reduce the fuel's evaporation, a problem at extremely low temperatures, and also to reduce the formation of ice crystals, which clogged fuel systems.



The crew of a 15cm sFH 18 heavy field howitzer pose beside their 12-ton SdKfz 8 heavy halftrack (schwerer Zugkraftwagen). The latter was the standard prime mover for 15cm howitzers and guns, 10cm guns, 21cm mortars, and 8.8cm and 10.5cm Flak pieces. The halftrack is seldom seen with the canvas weather top erected.



Troops traveling aboard a train are served a meal from the unit's field kitchen wagons loaded on a flat car. It must have been a cold and windy duty for the cooks to prepare the meal on an open flatcar while moving.



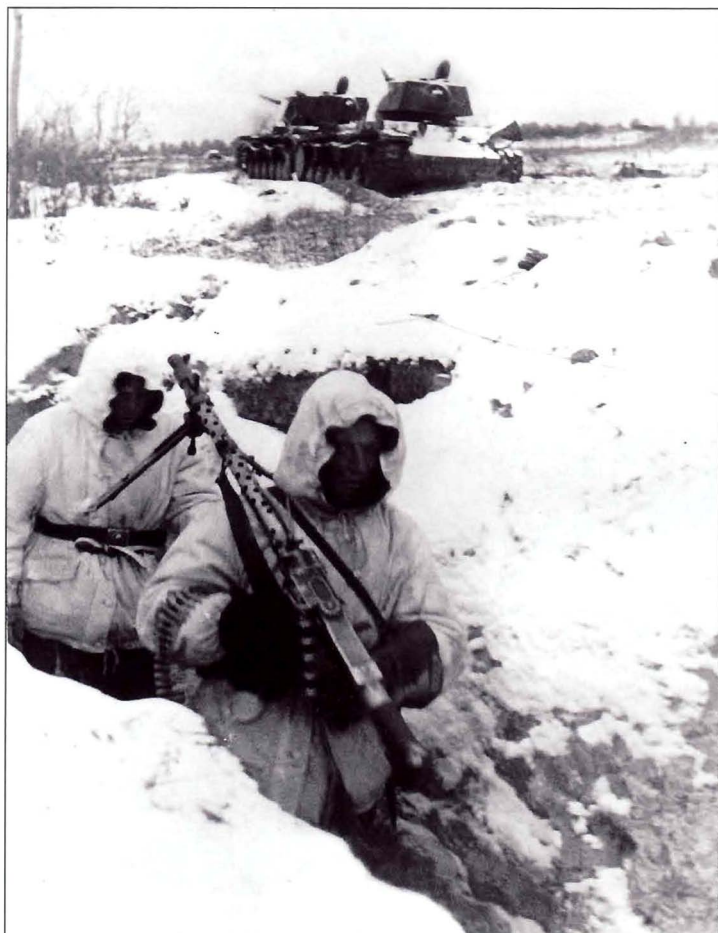
Waffen-SS troops in a remote position recover a parachute-dropped provisions bomb (Versorgungsbombe) with up to 200 pounds of supplies. Aerial resupply was the only way some units could be maintained. Besides rations, ammunition and medical supplies could be dropped. To aid locating the containers they were painted orange and had a white parachute canopy.

The 2cm Flak 38, and the similar and earlier Flak 30, were extensively employed on the Eastern Front to break up infantry attacks using its practical rate of fire of 180 to 220 rpm. It was provided with both high-explosive and armor-piercing ammunition. The latter was effective against light armored vehicles. The 2cm Flak was also useful against bunkers, defended buildings, and other field fortifications. The crewman to the left rear uses a 1-meter EmR 1m stereoscopic rangefinder (Entfernungsmesser), a surprisingly accurate distance-measuring device. Note that the gun shield has been whitewashed and that a white canvas tarp lies nearby for camouflage and weather protection.





An MG34 troop mans its machine gun position (Schützenloch für leichtes Maschinengewehr), which the Landser more commonly called a "machine gun hole" (Maschinengewehrloch). Note that the bluing has been worn off the barrel jacket from long, hard use. US metallic linked machine gun belts were of the "disintegrating" type with the individual links falling apart when the cartridges were extracted and loaded. German belts remained intact with the individual links fastened together by small wire rings, making them easier to reuse. In the background are two knocked out Soviet KV-1 tanks.



An MG34 machine gunner is positioned in a firing trench; a short slit trench typically dug 1-4 meters forward from a fighting trench. Both the Germans and Soviets followed this practice. This provided more protection than simply digging firing steps into the trench's forward side.

An MG34 machine gun troop trudges down a former Soviet trench. This was a standard Soviet trench design being about 110 centimeters (43 inches) deep and thus providing cover only if a man stooped. Soviet practice was to dig winding trenches following terrain contours instead of regular geometric pattern trench traces. In the background are two knocked out KV-1 tanks.



A 10.5cm leFH18 light field howitzer in full recoil. The crew is wearing only the standard wool field uniform without any protective clothing other than some wearing gloves and some form of over boots. Note the litter of wicker baskets, boxes, and cans for projectiles, propellant cartridges, and fuses scattered around the gun. The gun appears to have been whitewashed.



The crew of a Luftwaffe 8.8cm Flak cleans up the gun emplacement. Note the cable suspended on Y-shaped poles that connects the gun fuse-setter to the fire director located in the center of the four-gun battery position.



A Luftwaffe crew services its 2cm Flak 30 set-up in a frontline position. Though normally covered by a canvas tarp, it had to be checked a couple times a day to ensure there was no ice build-up in the firing mechanism and operating controls. It also had to be re-oiled. Note the gun shield has been removed.



This Luftwaffe 2cm Flak 30 appears to be set-up in a rear area air defense position rather than a frontline defensive position. Light Flak was typically set-up in platoon (Flak-Zug) positions of three guns in a triangular layout. The "point" of the triangle was oriented in the expected direction of enemy attack. The canvas tarp is field gray, a dark green.



A supply column moves down a typical Russian road. Even in freezing weather such a road would be churned to mud. As the center becomes muddier wagons, carts, and sleds (which could be dragged over mud as easily as snow) tended to shift their line of travel to the edges. It did not take long for a road of the steeps to a score of meters wide.



Troops clad in a variety of cold weather and snow camouflage garments rummage through abandoned Soviet sleds in search of anything usable. Such sleds basically replaced wagons during the winter. The Soviet sleds themselves would be pressed into German service. In the background is a German wagon mounting an MG34 machine gun.



Wearing reversible winter uniforms, troops move toward the front. A Kfz 11 medium cross-country personnel car tows a 3.7cm Pak 35/36 antitank gun. Note that the car's and gun's wheels are the same, making them interchangeable. Antitank guns were provided motorized prime movers if at all possible to allow them to be moved into position rapidly and repositioned quickly. This maximized their survivability and ability to meet new threats.



The command groups of a panzer unit and the infantry unit they support scan the terrain ahead for enemy activity and suitable movement routes. The conspicuousness of the black panzer uniform is demonstrated here.



A heavy machine gun troop prepares to dig in after occupying a position. The kneeling crewman had the tripod mount slung on his back. He wears service eyeglasses (Dienstbrille), which were issued in a field gray tin case. He holds a folding spade (Klappspaten) introduced in 1938 and from which the US Army folding entrenching tool was copied in 1943. The Obergefreiter behind him wears the Crimean Shield on his left sleeve and the Infantry Assault Badge on his left breast pocket.



This artillery battery observation post has obviously been co-located in an infantry trench. Observation posts were not normally so crowded. A Feldfernsprecher 33 in its Bakelite case can be seen to the right of the Sf.14Z Scherenfernrohr. It appears that an assault is being launched as a column of assault guns advance. In the original photograph there appears to be faint puffs of smoke on the distant treeline.



Smoke troops (Nebeltruppen) carry 75.3-pound (34.15-kilogram) 15cm Nebelwerfer 41 high-explosive rockets to the launcher position. "Nebel" is often mistranslated as "fog", for although it can mean that, in the military context it means screening smoke delivered by artillery, mortars, barrage rocket launchers, or smoke pots, grenades, and candles. The name 'Nebeltruppen' was a pre-war cover for men who originally operated smoke/chemical mortars. They changed to operating rocket launchers. One of the six-tube Nebelwerfers can be seen at the left edge.

Based on their tunic design, these appear to be former Soviet troops in German service. They operate a Soviet-made 50mm RM-38 light mortar designated by the Germans as the 5cm GrW 205/1(r). Its ammunition was not interchangeable with the German 5cm leGrW36 mortar.



An observer scans a nearby treeline searching for lurking enemy snipers. The knocked out T-34/76, has been, according to common practice, stripped of anything useful by whichever side's troops got to it first. Unless burned out, a tank hulk was a goldmine for infantrymen. There were often rations, water bottles, first aid items, blankets, hand grenades, at least one submachine gun, and one or two machine guns. These could be dismantled and pressed into service by the infantry. Note that the bow 7.62mm DT machine gun has been removed from this wreck, as no doubt has the coaxial machine gun.





Infantrymen pass a destroyed T-34/76 in a totally leveled town. The gun barrel has been completely blown off.



This T-34/76 may have been destroyed by an air attack, along with the rest of the convoy it was accompanying. The soldier wears only his white undershirt, having removed his tunic. This was a rare occurrence in the field.



The command post of a motorized heavy company is identified by the white on field gray metal pennant above its camouflaged dugout. A heavy company (schwere Kompanie) was a weapons company, its armament varying depending on the type of regiment/battalion and period. They might be armed with various combinations of antitank guns, mortars, and infantry guns. Some possessed a pioneer platoon. This is a new type of tactical symbol introduced on 23 May 1943 when the system was completely revised. This affected most such symbols displayed on unit pennants, signs, and vehicles as well as identifying units on maps.



A supply column passes by an officer. The Germans relied heavily on horse transport drawing wagons and carts, and in the winter, sleds. The officer wears the Cholm Shield (Cholmschild) on his left sleeve to commemorate the January to May 1942 defense of the Cholm Pocket. Behind the officer is a Typ HK-101 SdKfz 2 Kettenkrad halftrack motorcycle. This was used as a utility vehicle and especially valuable on the Eastern Front where mud and snow made the passage of light wheeled vehicles almost impossible.

A gunner carries a 7.92mm MG42 machine gun. These were introduced in large numbers in 1943, but the MG34 remained in extremely wide use to the war's end. The MG42 had a higher rate of fire compared to the MG34, 1,100-1,200 rpm as opposed to 800-900 rpm. The US .30-caliber M1919A4 machine gun fired at 400-550 rpm. Soviet machine guns fired at 500-600 rpm. The gunner is additionally armed with a Stg24 stick hand grenade and a Belgian 9mm G.P. pistol (commonly known as the Browning High Power), which the Germans called a Pistole 640(b). It was a popular handgun firing the same 9mm round as the Luger P08 and Walther P35 pistols, but instead of an eight-round magazine the Browning held 13 rounds.



A patrol moves up a road near the front before setting out on its mission. They wear the reversible winter uniform with the gray side out. The man in the lead carries a 9mm Walther P38 pistol. A pistol-armed soldier was issued a holster, a cleaning rod carried inside the holster, and two eight-round magazines with the spare carried in a pocket inside the holster. 9mm ammunition was issued in 16-round cartons to accommodate the two magazines. This explains why MP38 and MP40 machine pistols had 32-round magazines. They could be filled from two 16-round cartons with no ammunition wastage.

A Gebirgsjäger takes aim with his Mauser Kar98k carbine (Karabiner), which the Landsers called by a variety of slang terms: Gewehr (rifle), Mauser Büchse (old term for a firearm), Flint (shotgun), or Knarre (colloquialism for gun). Note that the range slide on the leaf sight has been pushed forward to elevate the sight for long-range firing.



A Gebirgsjäger is posted as an air guard beside an MG34 machine gun mounted on a Dreibein 34 anti-aircraft tripod mount. It is fitted with a 50-round belt drum magazine and an anti-aircraft ring sight. It was common practice to hang 300-round ammunition cans (Patronenkästen 34) and basket drums by their carrying handles on the tripod legs. The gunner wears a fur-lined animal skin greatcoat. This was known as a "Wachmantel" (guard overcoat) or "Steppemantel" (Steppe overcoat). These coats were issued not only to guards but also to many vehicle drivers.

German soldiers were taught that even 15-20 centimeters (6-8 inches) of cover might save their lives. This Gebirgsjäger wears a virtually empty rucksack on his back.



A patrol works its way through a birch forest. Signs of enemy movement were easy to detect in the snow; not just by footprints, but by snow knocked off bushes and low limbs. An alert patrol could detect such disturbances from a distance while one had to be almost on top of footprints before spotting them. The MG34 machine gun has been whitewashed, an unusual practice.



A soldier skis back to his unit's forward position following a field telephone line. Patrols were on the lookout for telephone lines leading to enemy positions and connecting strong points and outposts. Unless laid before heavy snows these lines were impossible to hide, because snow disturbed in covering them by hand was conspicuous. This man appears to have a couple of loaves of bread tucked under his rucksack flap.



A patrol leader identifies recently discovered enemy positions found to the company commander. The patrol leader wears an animal skin greatcoat with an unusually large fur collar. There was no standard design for these coats.

A ski-equipped Gebirgsjäger unit moves forward. Note the rucksacks carried by most. They are following a field cable line linked to a higher headquarters. Telephone and cable (containing multiple phone lines) were often used as route markers between units. These troops appear to be armed with 7.92mm Gew33/40 rifles, which were often substituted for Kar98ks in mountain units. While called a "rifle," the Gew33/40 was actually a shorter weapon. Production of this Czechoslovak-made weapon, the vz33 carbine, continued under the Germans. Being the shortest Mauser design used by the Germans, it was issued to mountain and parachute units. A man-drawn sled carries unit equipment.



An artillery observation post searches for enemy targets using the 6x30 Sf.14Z Scherenfernrohr (scissors binoculars). For obvious reasons it was known as the Eselohren (donkey ears) to the Landser. Each artillery batteries established an observation post among the frontline positions. In extremely cold weather fogging and icing hampered the use of optical devices, including weapon sights. The observer, probably the battery commander, wears a sage green windproof jacket while the recorder wears a snow suit.

This light machine gun position (Schützenloch für leichte Maschinengewehr), or "machine gun hole" (Maschinengewehrloch), is reveted with vertical planks. Once the gunner opens fire the position will be revealed because of the considerable snow dust thrown up by the muzzle blast. A Stg 24 stick hand grenade lays ready on the gun platform.





A Landser builds an ice block shelter using techniques akin to those for building Eskimo-style igloos. He wears a white anorak jacket. The Wehrmachts Adler (eagle) was not usually sewn to anoraks or other winter camouflage clothing. A knitted white wool cover has been fitted to his field cap. This was designed for the mountain cap (Bergmütze). His hands are protected by waterproof three-finger mittens. Winter 1943/44.



This NCO or officer is wearing the two-piece snowsuit (Schneetarnanzug) with the hood over his universal field cap. The cords over his neck are the retaining cord for the mittens and their white covers. Note the friend-or-foe colored identification bands. These were provided in red, blue, and green. He carries his whitewashed 6x30 binoculars inside an insulated cover with a standard leather protective cap over the eyepieces. He is armed with a whitewashed Soviet 7.62mm SVT-40 semi-automatic rifle, a popular weapon the Germans called the Selbstladegewehr 259(r) (self-loading rifle). Winter 1943/44.



This Landser wears a universal field cap (Einheitsfeldmütze) introduced in June 1943. It was influenced by the mountain cap (Bergmütze) in use before the war. He also wears some form of snow camouflage jacket. His 7.92mm Kar98k carbine has been whitewashed. This would be scrubbed off in the spring, although much would have already been rubbed off in daily use. Winter 1943/44.





This observer is poorly protected from the weather wearing a late-war style greatcoat (Mantel) made of thinner shoddy wool than earlier versions and lacking the dark green collar facing. His hands are protected by thickly insulated two-finger mittens. The universal field cap offered inadequate protection in such conditions even with the addition of the frost-covered wool scarf wrapped around his head. Winter 1943/44.



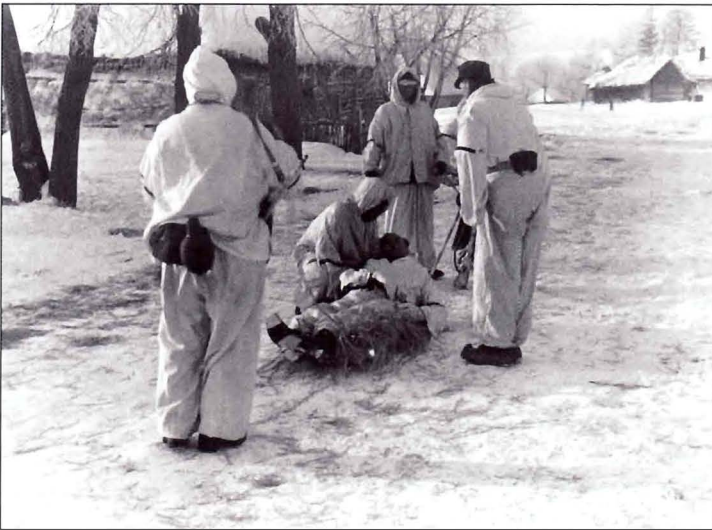
Gebirgstruppen wearing the sage green windbreaker for mountain troops (Windjacke für Gebirgstruppen) assemble Spanish riders (spanische Reiter) barbed wire-wrapped portable anti-personnel obstacles. These are also known as knife rests or chevaux de frise. These particular knife rests appear rather flimsy as most were built of thick logs. Once emplaced and drifted over with snow they were quite difficult to pass through, especially if positioned among bushes also covered by snowdrift. Winter 1943/44.



A ski-mounted patrol cautiously approaches a woodline. A lead element takes up covering positions while the tail element will approach the treeline under their cover. All troops wore two-piece snow suits. Winter 1943/44.



Three ski troops, clad in two-piece snow camouflage suits, return fire from the prone position, a stance they were taught to assume quickly while on skis. This is probably during a training session. Not all ski troops belonged to Skijäger or Gebirgsjäger units. Various infantry, reconnaissance, and anti-partisan units were also ski trained. Note that the Mauser Kar98k carbine, ski poles, and the upper surfaces of the skis are whitewashed. The undersides of skis were unpainted, allowing them to be waxed. Winter 1943/44.



A wounded soldier is secured to a small sled on which he will be pulled back to friendly lines for treatment. Being unable to move and so low to the snow he would quickly become extremely cold. It was essential that he be insulated with multiple blankets and straw. In extremely cold weather where circulation in the limbs is reduced, the danger of contracting gangrene was very high. Winter 1943/44.



Pioneer troops hack out a hasty antitank ditch as a temporary roadblock during the seemingly endless retreat. The easiest way to do this in a hard- or packed-surface road in frozen ground was to use demolition charges, at least to provide starter holes. However, in this instance it does not appear that demolitions were available or there would be rocks and dirt clods scattered all about.



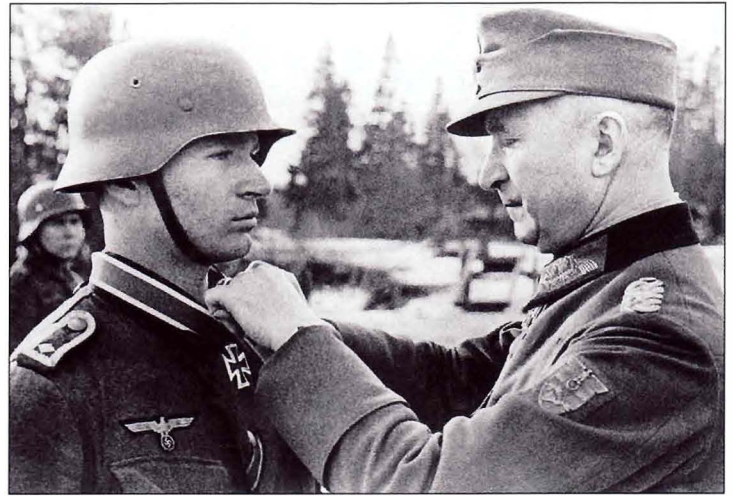
Pioneer troops struggle to unload a 370-kilogram (816-pound) SdKfz 303a "Goliath" light demolition carrier (leichter Ladungsträger) from a field car. This gasoline-driven vehicle was remotely controlled via a 650-meter (2,133-foot) wire and carried a 75-kilogram (165-pound) TNT charge. The longer SdKfz 303b version carried a 100-kilogram (220-pound) charge. A smaller and earlier version, the SdKfz 302, driven by an electric motor and carrying a 50-kilogram (110-pound) charge had seen use. A number of "Goliaths" were captured at Normandy where they proved to be ineffective for attacking beached landing craft. This gave them a bad reputation. On other fronts they were effectively employed against fortifications, defended buildings, and major obstacles, especially antitank barriers and walls.



A bunker has been built beneath a T-34/85 tank to provide effective protection from artillery. One disadvantage was that it provided the enemy with an easily identifiable landmark for directing fire at and pin-pointing the trench's location. Nevertheless, damaged tanks provided a rapidly constructed bunker with significant overhead cover. A severely damaged rifle, probably uncovered when the trench was dug, lies on the left lip of the trench.



A Knight's Cross bearer of Infanterie-Regiment 199 of 57. Infanterie-Division. The regiment was presented a special cuff band in late 1944 to commemorate Infanterie-Regiment List in which Hitler had served in World War I. The decorations on his left breast pocket are (left to right): Wound Badge (black—one or two wounds), Iron Cross 1st Class, and Infantry Assault Badge.



A Feldwebel is presented the Knight's Cross of the Iron Cross by his division commander, a Generalleutnant. The award of the Knight's Cross to enlisted men was comparatively rare. On the general's left shoulder is the bronze Crimean Shield (Krimsschild) awarded to personnel who participated in the bitter September 1941 to July 1942 campaign.



An extremely youthful Hauptmann and Knight's Cross bearer is congratulated by one of his men, an NCO aspirant (Unteroffiziers-Anwärter). On the Hauptmann's left breast are (left to right): Wound Badge (silver—three or four wounds or for a serious single wound), Iron Cross 1st Class, Armor Battle Badge, and (above the pocket) Close Battle Clasp.



The hand grenades stacked in this MG34 heavy machine gun position include a Stg24 stick grenade (with the igniter cap removed from the end of the handle), two EihGr39 "egg" grenades, and three Soviet RGD-33 grenades with slip-on fragmentation sleeves. The stick grenade had a field gray head and natural wooden handle. The egg grenade had a field gray body with a light blue igniter cap. The RGD-33 was all light olive drab.

Finnish troops are trained to use the Panzerfaust antitank projector. This is a Panzerfaust 30, which the Finns called the "Panssarikauhu". Finland made wider use of the Panzerfaust than any other country outside of Germany. The Panzerfaust proved to be a useful weapon, but it was most effective when several were barrage-fired at the same target from different directions. Finnish m/36 uniforms were olive drab. The man in the left rear is armed with a 9mm Suomi m/31 machine pistol (Konepistooli), the later long-barreled version with a 70-round drum magazine.



Finnish troops are provided training on the Panzerfaust 60 (left) and the Panzerfaust 30 (right) by a German Unteroffizier. The number appended to the different models indicated its approximate effective range in meters, although the Panzerfaust 60 actually had a maximum range of 80 meters. Most Panzerfäuste were painted dark yellow with a warning of the back blast printed in red on the launcher tube. Some were field gray through. Note that some of the Finnish troops wear the German Wehrmacht eagle.



An Unteroffizier demonstrates fitting the shaped-charge warhead into the launch tube of a Panzerfaust 30 to a group of officers. The Panzerfaust was not a reloadable weapon. The propellant charge is contained inside the launcher tube. The Oberleutnant to the left is armed with what appears to be a 7.65mm (.32-caliber) pistol. Commonly available private purchase pistols of this caliber included the Walther PP and PPK, Mauser HSc, and Sauer 38H.



A Finnish rifle squad moves up to occupy a position inside a grove. The Panzerfaust began to be issued in 1943 and by 1944 had become the principal infantryman's close-in antitank weapon. Antitank rifle grenades and shaped-charge hand mines remained in use, but the Panzerfaust provided better penetration and range than most of the other weapons.

Out of its environment. Infantrymen pass an IS-2 "Stalin" heavy tank (aka JS-2). While armed with a 122mm gun, its armor compared poorly with the Tiger's and it was in the same weight range as the Panther. The exceedingly long barrel was a hindrance on narrow city streets.





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