



1939-41

The German Army

GORDON ROTTMAN & RON VOLSTAD

CONCORD
PUBLICATIONS COMPANY

The German Army **BLETZKRIEG** **1939-41**

Text by Gordon Rottman
Color plates by Ronald Volstad

Copyright © 2005
by CONCORD PUBLICATIONS CO.
603-609 Castle Peak Road
Kong Nam Industrial Building
10/F, B1, Tsuen Wan
New Territories, Hong Kong
www.concord-publications.com

All rights reserved. No part of
this publication may be reproduced,
stored in a retrieval system or
transmitted in any form or by any
means, electronic, mechanical,
photocopying or otherwise, without
the prior written permission of
Concord Publications Co.

We welcome authors who can help
expand our range of books. If you
would like to submit material,
please feel free to contact us.

We are always on the look-out for new,
unpublished photos for this series.
If you have photos or slides or
information you feel may be useful to
future volumes, please send them to us
for possible future publication.
Full photo credits will be given upon
publication.

ISBN 962-361-601-5
printed in Hong Kong

ARTIST'S NOTE

A good number of years have gone by since I first agreed to be involved in the "Fighting Men" series of books with Concord Publications. At that time I found the concept to be particularly exciting and I was looking to fill time in my own schedule. It seemed a wonderful way to fill those gaps between other projects that I was doing for the owner of Concord. While it worked as planned for a short time, quickly I found that the time to work on this title was constantly being pre-empted by more pressing concerns, thus leaving me to offer this explanation so many years later.

All the paintings within this book are produced using some manner of water media; mostly acrylic paint of some brand or another. While I had been working as a military illustrator full time since 1984, most of my work involved a solitary soldier rather than full scenes. You might imagine my shock in learning that such paintings as shown in this book took rather longer to produce than those single figures I had done previously. Instead of a day or two, I was now finding that it took a week or two. These are lessons hard learned by a self-taught artist such as myself.

My good friend Gord Rottman and I have worked together many times and both of us pride ourselves in our efforts to get things right. However in the years that have passed since beginning this title, fresh information has been found that makes some of the contents of this book in error. As it was quite impossible to properly change these things, I ask that the reader forgive us our inaccuracies and enjoy the book for what it is. I suspect that the viewer will notice the change in artistic style and technique (hopefully for the better). Note that all the paintings were produced in consecutive numerical order.

I suspect that most artists that work in a specific genre would agree that their accomplishments would not have been possible without the assistance of others. Certainly little of what I've achieved would have been possible without the continued support of my wife, Carol. My oldest friend, Pete Brunelle has provided constant encouragement and some dynamic posing. Rob Paterson has shared his expertise gained from more than three decades of collecting, whilst filling my own closets with militaria. My good friend Gary Edmundson works hard to maintain his physique in order to fit into those wartime uniforms for poses. Of course I must offer my thanks to Freddie Leung, who has patiently accepted my (never fast enough) efforts to produce the best and most accurate images of which I am capable. However, such comments would be incomplete if I did not thank those of you who have supported my efforts since my work was first published more than thirty years ago. You have my undying gratitude. The best is yet to come.

Introduction

The Blitzkrieg—1939-41. As the seemingly unstoppable German juggernaut tore through the heart of Europe, battled on the sands of Africa, and flooded across the steppes of Russia, much of the world girdled itself to resist the Blitzkrieg—the Lightning War. World military leaders and strategists asked themselves, "What is their secret?" Many answers were put forth, the relentless Panzers, new tactical concepts, and the sheer force of the Luftwaffe.

There was no secret to the initial German successes. The German General Staff had minutely analyzed the potential and weaknesses of its future enemies, developed sound operational plans, established an effective command and control system, and integrated their new Armor Force with the artillery, infantry, and Luftwaffe into an effective combined arms force.

So much for the strategic and operational levels of the Blitzkrieg. It was at the tactical level, in the line units, that the German Army—des deutschen Heer, truly excelled. Unit organization and small unit tactics had evolved from the brutal lessons learned in the mud and blood of the Western Front in World War I. But, unlike many of Germany's future enemies, he had not prepared to fight the next war in the same manner. The army's tactics and training were intended to prevent a recurrence of the Great War's insanity. The goal was to quickly shatter the enemy's defenses, penetrate into his rear areas, disrupt his logistics, and defeat the enemy before he could reorganize.

Many factors contributed to the success and character of the German Army. One of the most important was training, tough, demanding, realistic training for both units and individuals. Units were highly trained in all aspects of their mission. Even with many being reorganized, expanded, and endlessly called on to provide cadres for new units of the constantly growing Army, most were able to maintain an effective level of proficiency. Small unit and individual training included a series of battle drills designed to condition men and units to respond in battle as they did in training. German training during the immediate pre-war period tended to better provide the German soldier with a much more realistic preparation for combat than the training conducted by many of his future opponents. Neither was the training of officers and NCOs neglected. Demanding and lengthy training courses served to prepare these leaders well. Not only was their training oriented toward leading their units, but on how to train their units and integrate them into the combined arms structure. It imparted a professionalism that would pull many war weary units through the coming brutal years.

This high level of training went far beyond mastering one's individual skills. The pre-Third Reich army of only ten divisions was organized and trained to expand rapidly. Many enlisted men undertook officer and NCO training, but were not promoted until the expanding army needed them. Others, after completion of their active duty, were promoted to officer and NCO grades in the reserves, again, to await mobilization. Units were expected to be able to expand to three times their size upon full mobilization. Fleshed out with reservists and conscripts, platoons could become companies and companies, battalions. A successful pre-war test validated this concept.

Another factor was flexibility. Capitalizing on the inherent work ethics of the German people, leaders and men were encouraged to use their initiative and the skills a

well-founded civilian education gave them. An attitude was developed that every soldier contributed to the successful accomplishment of his unit's mission. If the situation changed drastically, do not await new orders, do something, do anything. If your leaders were lost, take command. If you saw an unexpected opportunity, take immediate advantage of it. But always move forward, toward the sound of the guns. This high degree of initiative, not then found in many other armies, was as much responsible for Germany's early victories as any more martial factor.

Closely coupled to initiative was the traditional German attitude toward the military profession. Military service was considered an honorable profession within German society. That does not mean that even a majority of the population felt that way, but nonetheless, it was largely accepted and glamorized in the pre-war newspapers, magazines, books, films, and radio programs. Much of the pre-war Army was comprised of men between 24 to 28 years of age who had experienced a gratifying youth during the rise of National Socialism through the Hitler Youth (Hitlerjugend) and National Labor Service (Reichsarbeitsdienstes). They saw Germany arise from the humiliation of the World War and reclaim its place in the world, through military might. These were the hard-core of the German Army. In most units, they comprised only ten to 15-percent of the enlisted men, somewhat more of the NCOs, and a very much higher percentage of the junior officers.

All were imbued with the concept of Gemeinschaft—community solidarity. This was an informal ideology embracing the manly comradeness of military life, skill at arms, unit solidarity, and physical toughness. These energetic, zealous young men served to set an example and goal for the less serious. They also ensured those who were less than enthusiastic of service to the Fatherland contributed their fair share to the unit. The Gemeinschaft ideology, coupled with unit traditions and appropriate military trappings, that is, oaths taken on unit colors, reintroduced traditional uniform distinctions, abundant decorations recognizing individual accomplishments; all contributed to strong unit cohesion.

The German Army replacement system functioned to achieve and maintain this same end. In order to preserve unit identity, entire divisions were allowed time and again to be depleted by as much as 50 to 75-percent in combat before finally withdrawn. Replacements and returned convalescents would then refill the division. It would be refitted and retrained as a group, and returned to combat once its new members had been trained and assimilated. The line of leadership was retained, men undergoing officer and NCO training were returned to their former units, and unit traditions were preserved along with their Kampfgeist—fighting spirit. This system continued in use, with modifications, until the final months of the war when overwhelming Allied superiority prevailed.

It was not just new tactics and modern equipment that explained the German Army's victories and durability, but many esoteric factors that the Germans had recognized and actively spun into the Army's fabric.

Infanterie-Regiment 7, 28. Infanterie-Division, Southern Poland, 1 September 1939



(Plate 1)

The unprovoked German invasion of Poland was the world's first exposure to the Blitzkrieg- Lightning War. Completed in 33 days, the Germans sarcastically referred to the operation as the "Great Fall Maneuvers". The Panzer and motorized divisions backed by the Luftwaffe proved an unbeatable combination against armies prepared for a repeat of the Great War. Regardless of the overwhelming power of German mobile forces, the vast bulk of the German Army was still comprised of infantry divisions organized little differently from their 1918 predecessors. Of the 59 divisions committed, only six were Panzer (one actually an ad hoc, Army and Waffen-SS formation), four light (cavalry branch motorized divisions), and two motorized infantry; all the remainder were infantry and mountain. The German General Staff had not yet embraced Gen. Heinz Guderian's concept of deep striking mobile forces laying ruin to the enemy's rear. Among the first units to enter Poland was Infanterie-Regiment 7 as part of 4.Armee's southern thrust. Dating back to 1921, it was raised as 7.(Prussian) Infanterie-Regiment, redesignated Infanterie-Regiment Schweidnitz in 1934, and again the 7th in 1935. These old Reichswehr regiments had the distinction of bearing lineages of the pre-1919 Imperial Army units.

The highly standardized field uniform (Feldanzug), introduced in 1933 after extensive field-testing, was worn by all personnel not requiring special uniforms. It provided the basis for some of these with the substitution of specialized components and was also the foundation for other forms of dress (service, guard, walking out, etc.). The field blouse was initially made of field gray wool blended with only five percent rayon. This was a predominantly green shade rather than gray. The field gray of the Imperial Army and Reichswehr was more gray-hued, the designation being retained for traditional reasons. The trousers, worn by all dismounted personnel, were stone gray. The design of this uniform was excellent for European service. Germany has only a brief summer with the remainder of the year often damp and experiencing mild to cold temperatures requiring a fairly warm uniform. It was also well suited for military service providing an acceptable appearance, comfort, flexibility, and numerous functional aspects such as roomy pockets and internal support straps (with four hooks positioned around the waist to take the weight of an equipment laden belt off the hips). Since its adoption, almost every year saw changes ordered to the uniform to improve its functionality, appearance, or, as the war progressed, conservation of materials.

Originally, the collar was of the same cloth as the blouse, but in an effort to improve its appearance, it was soon faced with the finer quality badge cloth (as used for the backings of cloth insignia), though still the same color as the blouse. In September 1935 it was ordered to face the collar with dark bluish green badge cloth. At this time enlisted rank shoulder straps and sleeve badges were also to be made of the same color material, now the German Army's official color. The collar patches have long been a traditional part of the German uniform. Originally, they were worn only by members of the Imperial Guard Korps and a few select line regiments (usually former guard units of other Germanic states). In the same sense that the patch's double bars signified protection of the Crown, during the Reichswehr and III Reich periods they implied protection of the state. These early style bars also served to display the unit's (of service), Gattung = type, Farbe = color.

The German Army possessed what was arguably the most complex system of identifying units, organizations, and specialized individuals on the uniform ever developed. Waffenfarbe was displayed on different types of uniforms in many ways, but the most predominate, being retained regardless of any wartime uniform economy measures, was as piping on enlisted men's rank shoulder straps and underlay on officer's shoulder cords. The pointed end straps worn here were authorized from late 1935 until their production was ordered ceased in March 1939, though they continued in use for sometime. This style was unusual in that it possessed no edge piping, but the unit-identifying device (number, letter or combination), to include senior NCOs', was embroidered in Waffenfarbe, here infantry white. All enlisted ranks' straps for parade tunic and dress forms of the field blouse were piped as were the new rounded end straps authorized in November 1938. Here, a senior corporal (Obergefreiter), additionally identified as an NCO aspirant by the braid loop on his shoulder strap, directs a rifleman (Schütze). NCO aspirants having completed the NCO aspirant course and not yet promoted, were often employed to assist group (squad) leaders.

Here, a senior corporal (Obergefreiter), additionally identified as an NCO aspirant by the braid loop on his shoulder strap, directs a rifleman (Schütze). NCO aspirants having completed the NCO aspirant course and not yet promoted, were often employed to assist squad leaders.



VOLSTAD 93

Panzer-Regiment 35, 4.Panzer-Division, Warsaw, Poland, 9 September 1939



(Plate 2)

Of the six Panzer-Divisionen thrusting into Poland, one, Panzer-Division Kempf, was actually an ad hoc Army and Waffen-SS formation. The first three divisions were organized in October 1935 and the other two raised in November 1938. These original divisions were big with some 180 tanks, or what the Germans called a Panzerkampfwagen—Pz.Kpfw., literally "armor battle vehicle". These were organized into a Panzer-Brigade with two Panzer-Regimenter of two Panzer-Abteilungen. These four battalions were each comprised of a single medium and two light companies with a total of 33 Pz.Kpfw.IIs, five IIIs, and six IVs.

The diminutive Pz.Kpfw.II, armed with only a 2cm cannon and 7.92mm MG34, was considered obsolete by the time Poland was invaded, yet it was the predominate tank available for use in that campaign and France. The Germans riding these vehicles into combat to face much more heavily armed and armored French D, H, and R series tanks regarded the Pz.Kpfw.II as little more than a training tank. The medium Pz.Kpfw.III and IV, besides being few in number, were under armed with Guderian protesting the weapon provided on both. The Pz.Kpfw.III mounted only a 3.7cm gun, rather than the desired 5cm, having little effect on heavier French and British machines. The Pz.Kpfw.IVs mounted a short-barrel 7.5cm gun (Stumpf—Stumpy) with limited range and armor penetration. The more conventional non-armor generals considered it an infantry support weapon rather than a tank fighter.

Guderian and Lutz envisioned the Panzer-Division as a combined arms formation. By the time of the Polish campaign, after a number of internal reorganizations, the divisions had a rifle, or Schützen-Brigade, composed of a Schützen-Regiment, with two truck- and motorcycle-mounted rifle battalions, and a separate Kradschützen- (motorcycle rifle) Bataillon. The 4. and 5.Panzer-Divisionen lacked a Kradschützen-Bataillon, but the latter had a second Schützen-Regiment. All had an Artillerie-Regiment (two truck-towed 10.5cm howitzer battalions), Panzer-Abwehr- (armor defense) Bataillon, Aufklärungs- (reconnaissance) Abteilung, Pionier-Bataillon, Nachrichten- (signal) Bataillon, and Versorgungstruppen (provisions or service support troops). Reconnaissance, cavalry, armor, armor defense, signal, smoke, and artillery units were designated by the term Abteilung, literally subdivision, rather than Bataillon as used by the infantry, rifles, and pioneers. Though the former term is often translated as "detachment", an Abteilung was of battalion-size and internally organized as such.

Germany's early use of armor was not always employed as envisioned by its advocates. Pushing into the outskirts of Warsaw, in a single day 4.Panzer-Division lost 57 out of 120 tanks committed; 210 were lost in the entire campaign by all divisions. This would later prove to be a valuable lesson. The Germans made no further attempts to storm the city, but subdued it with artillery and bombing. Warsaw was not to surrender until the 27th. Polish gunners used the predominant white Balkenkreuz (beamed cross) national insignia as an aiming point. Used since July 1939, it was ordered to be replaced by a white-edged black version in October. The white tactical number on the turret's side identifies this machine as belonging to 5.Kompanie (the initiated would know that the 1st through 3rd Companies were in I.Bataillon and the 4th through 6th were in II.Bataillon) and was 2nd Platoon's Number 1 tank.

Abandoning their disabled Pz.Kpfw.II Ausf.C, the surviving Panzerführer, an Unteroffizier, and Panzeroberschütze wear the distinctive black special uniform for armor troops (Sonderbekleidung der Panzertruppen) introduced in November 1934. Originally the uniform was intended for only tank and armored car crewmen, but its use gradually grew within Panzer units. These personnel were also issued standard field gray uniforms and the wear of the black uniform was restricted only to when operating their vehicles. Besides providing a striking appearance, its black color was also selected for practical reasons as it easily concealed oil and grease stains. The uniform's cut was also practical in that it lacked pocket flaps and a long skirt to prevent snagging on vehicle interior projections. The shoulder straps were sewn down around the edges for the same reason.

All ranks wore the same black collar patch displaying the metal death's (Totenkopf) head insignia to commemorate the tank troops of World War I. The pink Waffenfarbe of the Panzertruppen edged their collar patches, shoulder straps/cords, and collar. The double-breasted jacket and trousers were accompanied by a black necktie, gray tricot shirt, laced-top shoes, and standard black leather enlisted man's belt; officers used their brown model. The protective beret (Schutzmütze) was introduced with the black uniform. The beret was fitted with a thick felt or foam rubber dome-shaped integral helmet.



VOLSTAD
93

Panzer-Regiment 25, 7.Panzer-Division, Dinant, Belgium, 14 May 1940



(Plate 3)

Commanded by Maj.Gen. Erwin Rommel, the newly formed 7.Panzer-Division had spearheaded 4.Armee into Belgium four days earlier. Meeting its first real resistance on the Meuse River, what would become known as the "Phantom Division", was stalled by the destruction of the bridges on the 12th. Schützen-Regiment 7 attempted to cross the next day with seven-man rubber boats and suffered heavy losses. Rommel personally took command of II.Bataillon and ordered houses on the far bank set afire by artillery since there was no smoke ammunition to cover the exposed crossing. That night the first tanks of Panzer-Regiment 25 were ferried across and the attack was resumed in the morning.

Due to shortages of medium Pz.Kpfw.IIIs and IVs, the newly formed 7. and 8.Panzer-Divisionen were equipped with impounded Czechoslovak Pz.Kpfw.35(t) and Pz.Kpfw.38(t) (Skoda LTM and TNHPS) tanks as substitutes. Both mounted a 3.72cm gun plus 15mm and 7.92mm coaxial machine guns. A parenthesized lower case letter appearing behind a weapon's designation identifies it as an impounded or captured item given a German nomenclature (Herkunftsbezeichnung). This Pz.Kpfw.35(t) bears the new white edged Balkenkrenz and a much smaller than previously used tactical number; in this case identifying it as Number 2 Panzer, 3.Zug, 7.Kompanie. Lacking an effective main gun and built of weak, riveted armor, the Pz.Kpfw.35(t) was phased out in 1941, but the Pz.Kpfw.35(t) remained in production through 1942.

The black Panzertruppe uniform worn by this Panzerzugführer had not changed since the war's beginning. A May 1940 order directed that shoulder straps were no longer to be sewn down so as to accommodate slip-on slides. These field gray slides were introduced in January 1940 and bore Waffenfarbe embroidered unit numbers and/or letters. At the beginning of the war it was ordered that unit devices not be worn on shoulder straps by troops at the front. Officers and senior NCOs were to remove their metal devices or cover them with cloth slip-on covers (as worn here) while enlisted men and junior NCOs were to wear straps without devices or use slip-on covers; regardless of the order, devices were still often worn at the front. This Schützen-Regiment 7 Zugtruppführer (platoon team leader, meaning leader of the platoon headquarters troop and equivalent to a U.S. platoon sergeant), an Unterfeldwebel, has taken the simple expedient of wearing his straps upside-down to conceal its unit device and braid.

black Panzer uniform as more types of units were authorized its wear. Signal units assigned to Panzer formations displayed their lemons yellow while armored scout car crews of divisional reconnaissance battalions wore gold yellow and some armor divisions' artillery regiment's armored observation vehicle crewmen used red.

The 6. and 9.Panzer-Divisionen were formed in October 1939 by converting the 1. through 4.leichte-Divisionen. Light divisions were fully motorized formations belonging to the cavalry branch, an effort to retain a hold on its waning prestige. To the enthusiastic Panzer officers, they were a misuse of scarce mechanized resources. The assets of the 2.leichte-Division were reorganized into 7.Panzer-Division by redesignating the 6th and 7th Cavalry Rifle Regiments the 6. and 7.Schützen-Regimenter (though not redesignated as such until March 1940) and splitting 7th Reconnaissance Regiment (Motorized) into Kradschützen-Abteilung 7 and Aufklärung-Abteilung 37. Panzer-Regiment 25 (from 6.Panzer-Brigade) was added and the original division's Panzer-Abteilung 66 was retained as a separate unit, until absorbed as the Regiment's III.Abteilung in February 1941. The other divisional unit's retained their original designation (58), though two units bore different designations: Panzer-Abwehr-Abteilung 42 and Nachrichten-Bataillon 53.

At this time there were two types of motorized infantry unit within the German Army. The Infanterie-Regimenter (motorisiert) were organic to Infantry Divisions (Motorized). These were organized the same as a standard infantry regiment except all elements were fully motorized in light trucks and the regimental horse-mounted platoon had motorcycles. They were not redesignated as Panzergrenadier until 1944, though their parent divisions were redesignated as such in 1942. The second type was the rifle regiments organic to Panzer-Divisionen. By now the Schützen-Regimenter had three battalions if a Panzer-Division had only one rifle regiment. If it had two regiments, then each had two battalions. The battalions were organized similar to a motorized infantry regiment's, but the third rifle company had motorcycles. Besides the usual machine gun company each battalion also had a heavy (weapons) company rather than only one under regimental control. Regimental organization was to undergo many changes during the course of the war. Contrary to popular perception, only one battalion per Panzer-Division was equipped with armored half-track infantry carriers, and only small numbers had been used in France. More were not received until prior to the invasion of the Soviet Union. These regiments were not redesignated Panzergrenadier until 1942.

Other branches' Waffenfarbe were now being worn on the



VOLSTAD 93



(Plate 4)

The German invasions of Denmark and Norway were accomplished mainly with lower quality, newly raised divisions. German divisions were raised in "waves", i.e. groups of divisions formed at the same time from the same manpower pool. There were also slight differences in structure between the different waves' divisions, usually in numbers and distribution of crew-served weapons, dependent upon availability.

Of the two infantry divisions committed to Denmark and the five to Norway, four (163., 170., 181., 196.) were raised in the January 1940 7th Wave. The regiments of this wave's 13 divisions were formed principally from existing field replacement battalions. Their organization was different from the normal establishment in that they were extremely short of mortars and infantry guns.

The basic individual field equipment (Feldausrüstung des Mannes) with which rifleman were equipped was comprised of an integrated system of equipment designed to compliment each other in its wear and practical use. A rifleman's gear at the war's beginning consisted of a leather belt on which two M1911 cartridge pouches were attached (30-rounds in each). The M1931 bread bag was as much a traditional part of the German uniform as jackboots. In it were carried rations, eating utensils, meat container, fat box, carbine cleaning kit, and field cap. A felt-covered, aluminum .8-liter M1931 field flask with drinking cup and M1931 cook pot are attached to the bread bag. The S84/98 bayonet is worn here in the prescribed manner attached to the small entrenching tool carrier, but was often simply slipped on the belt forward of the spade. The M1930 gas mask is carried in a robust fluted steel case; several alternate carrying positions were prescribed to accommodate specific duty requirements. A rubberized gas sheet, carried in a small pouch, is attached to the mask case's strap. The triangular M1931 tent-quarter (combination weather cape, ground cloth, tent section) was usually fastened to the belt or mask case's strap. It was printed with light and dark camouflage on opposite sides. This combination provided the rifleman with a minimum of gear needed to function effectively in the field for up to twenty-four hours; a means to carry ammunition, sidearm (bayonet), rations, water, cooking utensils, and small subsistence items. It also provided necessary battlefield survival gear: gas mask, gas sheet, entrenching tool, and tent quarter.

This load was borne by a support strap and hook system integral

to the field blouse. The leather belt support straps, combat pack frame ("A" frame), and M1939 pack had been adopted in early 1939, but were in short supply due to the Army's rapid expansion.

In order to carry a more substantial existence load, the M1939 pack was provided to carry additional clothing, weather protection gear (greatcoat and/or blanket), rations, and subsistence and minimal comfort items. This pack was required to be attached to the belt by its shoulder straps. The pack's back flap was covered with unshaven calfskin for water repellency. Equipment carried on the soldier was referred to as march baggage (Marschgepäck).

This rifleman is armed with the Kar98b carbine, a post-World War I modification of the Gew98 rifle; it was actually the same length. The squad leader carries an MP28/II, the standard machine pistol prior to the adoption of the MP38. These were still used in many units before being relegated to second-line and police units in 1941/42. Four 32-round magazines were carried in the leather pouch. German 9mm cartridges had been issued in 16-round cartons since 1908; two eight-round magazines were supplied with the P08 Luger pistol. Machine pistol magazines were designed to accommodate the contents of two 9mm cartons to prevent waste.

The wool greatcoat (Mantel) was a crucial item for the German soldier. Coupled with the wool blanket in the greatcoat roll, it was the only form of bedding issued regardless on temperature. Though a black version of the M1934 field cap was authorized in March 1940, the field gray version was still in use by Panzer troops. The Panzerschütze also wears the only other field gray item authorized for wear with the black Panzer uniform, the greatcoat.

Only a single armor unit was committed to Denmark with Senior Command for Special Employment XXXI (Heeres Kommando zur besonderen Verwendung—z.b.V.) and the 170. and 198. Infanterie Divisionen. This force succeeded in seizing Copenhagen in 12 hours after launching the invasion. Panzer-Abteilung 40 z.b.V. was organized in March 1940 by consolidating companies from three different Panzer-Regimenter: 6./6, 5./15, and 1./35. Equipped with Pz.Kpfw.I light tanks, armed with only two 7.92mm MG34s, they were originally intended as training vehicles. The unit later deployed to Norway and was absorbed into Panzer-Regiment 9 as its II. Bataillon in 1942.



VOLSTAD
93



(Plate 5)

The Gebirgstruppen (mountain troops) have a long and proud history with the first such units formed in 1781 by Bavaria, still the traditional source of such troops. Considered elite units, the Gebirgstruppen were called on through the war to perform difficult tasks in inhospitable terrain and harsh climates. The Gebirgstruppen were not volunteers, but conscripts posted to a mountain unit simply because they resided in its home defense district. Many of these young men though were experienced skiers, familiar with alpine weather conditions, and had taken part in a favorite German diversion, hill walking.

The 3.Gebirgs-Division was formed in April 1938 from the Austrian Federal Army's 5th and 7th Divisions. Austria's annexation into the III Reich added two mountain divisions to the establishment to serve alongside the existing 1.Gebirgs-Division. The divisions' two regiments, though similar to regular units, were structured to fight in a different manner due to their environment's terrain restrictions. The battalions and companies were designed to fight on narrow frontages independent of support from parent units. The three battalions' three Gebirgsjäger-Kompanien were organized and armed as regular units, but rather than a machine gun company, Gebirgsjäger-Bataillone had two small companies. The staff company had pioneer and heavy machine gun (4 x MG34) platoons, and the heavy company had mortar (6 x 8cm) and infantry gun (2 x 7.5cm) platoons. The regimental 16.Kompanie (Panzer-Abwehr) had 12 x 3.7cm anti-tank guns.

Gebirgsjäger-Regiment 139 was raised in August 1938 by consolidating the Austrian Infanterie-Regiment 7, Alpenjäger-Regiment 10, and Alpenjäger-Bataillon 5. It was landed by destroyers at the strategically important, far northern Norwegian port of Narvik on 9 April. Within days ten German destroyers and several freighters were sunk or severely damaged in Ofotfjord by the marauding Royal Navy. This setback was followed by the landing of British, French, and Polish troops, who immediately advanced on Narvik. Cutoff from the Fatherland, with only a trickle of supplies being flown in, and even fewer reinforcements, the Gebirgsjägeren were on their own. Pushed out of Narvik on 28 May, the German lines stretched from the town's outskirts, along the fjords, and east to the Swedish border.

The few Gebirgsjägeren faced the Allied forces arrayed against them on the north front. Reinforcements, to secure the easily

defended fjords and the German rear, came from an unexpected source. The stranded sunken ships' crews stripped their craft of light guns, radios, and supplies. They were formed into seven small Marine Bataillone (named after their commanders) and armed with whatever was available. Though most were tasked to defend east sectors, Marine-Bataillon Kothe with 300 Matrosen (seamen), fought as part of Gebirgsjäger-Regiment 139. Surprisingly, the Allies evacuated on 7 June leaving the Norwegians to fight alone; only to surrender on the 9th.

Outwardly the mountain tunic (Bergrock) was little different from other troops'. It was fitted with a buttoned collar tab to hold closed when turned up against cold winds; cuff tabs permitted them to be tightly closed. The water-resistant trousers' legs, with reinforced seat and crotch, were designed for wear with wrap-around puttees providing a snow-tight seal between the cuffs and heavy clefted mountain boots. This Gebirgsjäger wears the double-breasted water-resistant wind jacket (Windjacke). The shoulder straps bear the Gebirgsjäger light green Waffenfarbe. The traditional mountain fold-up flaps that could be pulled down to protect the ears on the neck. The metal edelweiss badge had been worn on the cap's side since May 1939, but was derived from the similar World War I Alpine Corps' badge. The Hauptmann wears a limited issue water-resistant, reversible to white, hooded, pullover wind blouse (Windbluse).

While most of the equipment of the Oberjäger (traditional title for a Gebirgstruppe Unteroffizier) is standard issue, Gebirgstruppen were issued a larger than standard 1-liter canteen and the M1934 rucksack for high mountain troops. This large Bergen-type rucksack was required to carry the necessary additional clothing, to include his greatcoat and blanket roll, and rations. At Narvik, though, the cutoff German's daily rations were reduced to five slices of bread.

The sailors of the Marine-Bataillone wore whatever odds and ends they could acquire. This Matrose wears War Navy trousers and cap (the Kriegsmarine cap band replaced those bearing ship names at the war's beginning) with a Norwegian M1912 infantry tunic. His gear is also Norwegian, including the M1894 bayonet, plus a rolled War Navy topcoat. He bears a World War I 7.92mm Gewehr rifle, carried on warships.



VOLSTAD93

Infanterie-Regiment 40, 27. Infanterie-Division, Somme, France, June 1940



(Plate 6)

Originally formed as Infanterie-Regiment Augsburg in 1934, and redesignated a year later, Infanterie-Regiment 40 served first in southern Poland and then was posted to the West Front. There it occupied defensive positions in the Eifel, on the French border, until it thrust into Luxembourg and then the French Ardennes in May with XXXVIII. Armee-Korps. The division was unusual in that it was one of four infantry divisions to be converted to armor, 17. Panzer-Division in November 1940 (the others being 16., 19., and 33. Infanterie to 16., 19., and 15. Panzer respectively).

Germany had begun development of a new antitank rifle in the 1930s resulting in the complex Rheinmetall-Borsig Panzerbüchse 38 (PzB38). Though some were fielded, it was heavy and expensive. The much simplified PzB39 was developed to replace it. This uniquely designed weapon was intended as the principal company-level antitank weapon, but due to its adoption just prior to the war, it was in extremely short supply; some units were equipped with the PzB38 and captured Polish wz35 antitank rifles, called the PzB35(p) by the Germans. Some experimental antitank rifles also saw limited use as did other captured models. The German weapons used a massive 13 x 94mm cartridge case, developed in World War I, necked down to 7.92mm. The PzB35(p) used an entirely different 7.92mm cartridge. The comparatively diminutive bullet had a tungsten carbide core, an idea borrowed from the Poles, backed by a lachrymatory (tear gas) pellet. The inclusion of this feature was apparently of negligible effectiveness as Allied intelligence became aware of this only after the weapon was withdrawn from use. The PzB39 was effective only to 300 meters where it could penetrate 20mm of armor at zero degree impact and 30mm at 100 meters. The bullet had little effect on the target tank itself, but was intended to disable the crew; it would ricochet about until someone was hit and several shots might be required before the vehicle was neutralized. Tank development rapidly overtook the capabilities of these weapons and by the time sufficient numbers were available, they were obsolete. Even in 1940, many of the French tanks encountered by the Germans had sufficient armor to resist these weapons. Most were withdrawn by 1942, though an unsuccessful attempt was made to revive them by modifying some as a grenade launcher, the Granatebüchse 39 (GrB39). Their weight and bulk also made them awkward and unpopular weapons to handle due to their 12.6kg (27 lbs) weight and 1580mm (62 in) length. Once these weapons were withdrawn, there were no dedicated company-level antitank weapons available; the Panzerfaust series of antitank rocket

launchers were not fielded until late 1943. Many of the withdrawn weapons were provided to Italian, Romanian, and Hungarian forces, all severely deficient in antitank weapons.

Three antitank rifles were assigned to a rifle company's antitank troop (Panzerbüchsentrupp) with each manned by a two-man crew and led by a troop leader. The troop could be employed as a unit to concentrate its fire on an approaching tank formation or individual weapons could be attached to each rifle platoon. The weapon's ammunition was carried in two detachable, ten-round cartridge holders fitted on either side of its receiver. Additional ammunition was carried by the assistant gunner in a M1935 cartridge container as used for MG34 machine guns. Though a single shot weapon, a PzB39 in the hands of a well drilled crew could deliver a rate of 10 to 12 rounds a minute. The weapon was operated by pushing forward and down on the pistol grip, which lowered the breechblock. A cartridge was chambered by hand and the pistol grip was raised and pulled back thus raising and locking the breechblock. After firing and again lowering the breechblock, the expended cartridge was ejected. Panzerbüchse crews were trained in tank identification, vulnerable aim points, crew drill, safety, and firing techniques. Antitank tactics included the use of the Nb39 smoke cylinder (Rauchröhre Nb39) shown here. The device, intended to blind tank crews, emitted dark gray smoke for three to four minutes. The gunner is armed with a 9mm P08 pistol (Luger).

Here we see the assistant gunner arming a cluster charge (Geballte Ladung). This was comprised of six M1924 stick grenade heads with the handles removed and lashed around a seventh grenade with its handle. This demolition assembly was used to destroy bunkers and could knock off a tank's tread. However, with a weight of just under 4kg (about 6 lbs), its throwing range was extremely limited. The assistant bears a pair of carrying pouches for hand grenades with each pouch capable of holding up to five stick grenades.



Sturmartillerie-Abteilung 640, Estrees, France, 6 June 1940



(Plate 7)

Infanterie-Regiment (motorisiert) Großdeutschland was one of the few truly elite units of the German Army. It was attached to 10. Panzer-Division during the breakthrough of the Weygand Line as part of Panzergruppe von Kleist when it penetrated the weakly prepared French Somme River defenses.

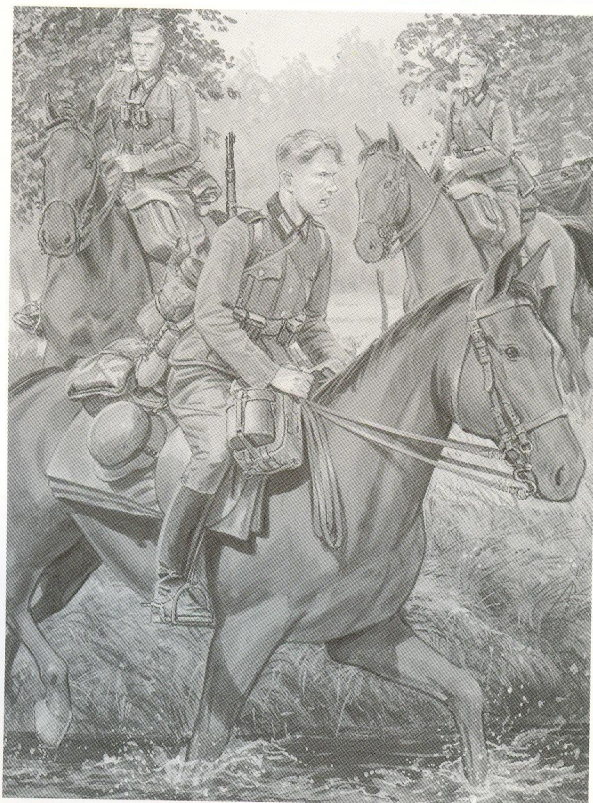
Attached to Regiment "GD" was a new type of unit, one of six assault artillery batteries then in existence; only four saw combat. Regiment "GD" also possessed its own organic 16th (Assault Gun) Company/IV Battalion—16.(StuG)/IV Btl. Equipped with six assault howitzers III model A (Sturmgeschütz III Ausführung A- StuG III Ausf. A), the unit was intended to provide direct fire support to infantry, especially against strongpoints and other fortified positions. Based on a 7.5cm KwK L/24 howitzer mounted on a Panzer III chassis fitted with reinforced frontal armor, it was ideally suited for the role. Lacking a turret, they had a lower profile than tanks, but their field of fire was limited. Though possessing the same mobility as a tank, assault artillery were not intended to replace the Panzer, at least not until later in the war. They were less costly and faster to produce plus easier to train crews and maintain when compared to tanks. Both the armor force and artillery originally resisted the development of assault artillery, fearing their production would limit the equipment available to them. Additionally, both branches wished to fight the battle in their own manner and not be burdened with providing direct fire support to infantrymen. Their success in France was notable and production was increased along with the formation of assault artillery battalions beginning in August 1940. However, due to the earlier resistance to their adoption, only eleven Sturmartillerie-Abteilungen were available in time for the invasion of the Soviet Union. Once the concept of the assault gun was accepted and their utility realized, a wide variety of units were formed with some assigned to the Panzertruppen and anti-tank troops as well as the artillery. These units were not redesignated assault gun (Sturmgeschütze-) until January 1941.

These first assault artillery Kaononieren were outfitted with an experimental field gray uniform. Based on the black Panzer uniform, this early version was somewhat different than the standard type ordered in July 1940. Double collar bars, without backing patches, were sewn on a dark green collar and the artillery's red Waffenfarbe was used. Production suits had a field gray collar and plain (no bars) red piped patches. It was not uncommon for the Panzer death head insignia to be worn on plain patches or standard double bars

patches used, both in defiance of orders. Confusion as to what collar insignia were authorized by the many types of assault gun units was to continue for the war's duration. Field gray was used rather than the Panzer black due to that branch's claim on the uniform, but principally to provide crewmen with sufficient concealment when conducting frequent dismounted reconnaissance and not to make them conspicuous to enemy observers when supporting field gray clad infantrymen. This gun leader (Geschützführer), a junior sergeant (Unteroffizier), wore unadorned pre-war shoulder straps sewn down around the edges to prevent snagging on projections.

A field gray version of the black Panzer beret was issued, but was withdrawn in January 1941 with the Panzer version and replaced by standard field gray caps. Like its Panzer counterpart, the beret was fitted with a padded liner, but another experimental headgear was used. Constructed of thick foam rubber ribs covered with field gray cloth, it was never adopted as radio headsets could not be worn with it and the troops found its appearance unappealing. The Infantry Regiment "GD" company leader (Kompanieführer), a senior lieutenant (Oberleutnant) coordinating actions with the gun leader, is typically outfitted for an officer in the unit. This regiment's distinctive cuff title was worn from June 1939 until replaced by a black version in October 1940. Also visible is the silver-colored, intertwined "GD" shoulder cords device worn by all ranks. Regiment "GD" was formed from Guard Regiment Berlin (Wachtbattalion Berlin) in June 1939. Prior to mobilization, companies from regular divisions were selected to serve as part of the Reichswehr providing honor guards, security of National Defense Ministry buildings, and participating in countless ceremonies. Upon mobilization, subunits were drawn from other units and their assignment made permanent. Besides possessing the subunit normal for an infantry regiment, Regiment "GD" was also assigned to IV Battalion with heavy weapons, and from September 1940, a Battalion with additional support subunits, the battalion-size Support Leader Staff 400 plus the attached Artillery Battalion 400 and Assault Pioneer Battalion 43.





(Plate 8)

In the early afternoon of 9 June, the reconnaissance group of the 6.Infanterie-Division approached the critical Seine River, some 80 kilometers northwest of Paris. Ordered to seize the bridge at Las Andelys and establish a bridgehead, the reconnaissance battalion's 1.Reiter-Schwadron galloped ahead. The Seine was the only defensible terrain feature capable of preventing Paris, itself on the river, from being outflanked by the 4.Armee. As Lieut. Georg von Boeselager's squadron approached the river on that hot afternoon, a resounding explosion told them the French had blown the bridge.

A dismounted patrol reported the bridge site's far side to be well defended by entrenchments and machine gun emplacements of elements of the 6th Dragoon Regiment. However, about 100 meters to the German's right was a carelessly undefended section of riverbank. The young squadron leader positioned his unit to provide covering fire from the near bank. Von Boeselager then led 12 of his best riders into the swiftly flowing river, their rifles were slung across their backs and each clenched an ammunition clip in their teeth, the lieutenant did the same with an extra MP38 machine pistol magazine. The accompanying three-man machine gun troop wrapped their MG34 in bundled shelter quarters. When the horses lost their footing as the river deepened, the riders dismounted and clung to their mounts' manes. Part way across the river French sentries spotted the group and took it under rifle fire. Most of the group pressed on, remounting when their horses regained their footing as they approached the far side; the heavily loaded machine gun troop was forced to turn back, however. The remainder of the covering squadron opened fire and quickly drove off the sentries. The horsemen burst from the river storming up the far bank. The French defenders, fearing a larger force had outflanked them, abandoned their positions. More reconnaissance troops crossed the river with their horses and supporting infantrymen came over in rubber boats to establish a bridgehead. Lieut. von Boeselager pressed on with his small force and succeeded in capturing an artillery battery. This small force was the first and only German unit to cross the Seine that day, an action that led to Paris being declared an open city two days later.

This small action aptly demonstrates the style of German reconnaissance units, mobile, combined arms units led by aggressive young commanders willing to exploit a tactical situation as well as fight for intelligence. Prior to 1939 German infantry divisions did not possess an organic reconnaissance unit, other than a cyclist

squadron assigned to the armor defense battalion. They relied mounted and cyclist squadrons attached from cavalry regiments. With the mobilization in August 1939 fourteen cavalry regiments were broken up and their assets used to form the new reconnaissance battalions for the 51 first and second wave divisions. The 6.Infanterie-Division's battalion was spawned from the Kavallerie-Regiment 15. As a designation oddity these units could not be fully identified without including the designation of the parent division, for example, Aufklärungs-Abteilungen of the 6.Infanterie-Division. Reconnaissance, cavalry, armor, armor defense, and artillery units of all types were designated by the term Abteilung, literally subdivision, rather than Bataillon as used by the infantry, rifles, and pioneers. Though the former term is often translated as "detachment", an Abteilung was of battalion-size and internally organized as such.

These battalions were comprised of a staff with signal platoons, 1st Mounted (1.Reiter-), 2nd Cyclist (2.Radfahrer-), and 3rd Heavy (3.schwere) Squadrons (Schwadronen). The motorized heavy squadron consisted of armor defense, infantry gun, and armor scout car platoons. Subsequent waves' divisional battalions were organized slightly different. The horse-mounted elements could operate in excess of 100 kilometers forward, the bicyclists 150, and the scout cars up to 250 kilometers forward. They were heavily armed; both the mounted and cyclist squadrons possessed nine light and two heavy machine guns, the latter also having three 5cm mortars. The battalions' soldiers, equipped similar to infantrymen, were identified by the traditional cavalry gold yellow Waffenfarbe and a Gothic "A" device.

In October and November 1942 the Aufklärungs-Abteilungen of most infantry divisions were redesignated cyclist battalions (Radfahrer-Abteilungen). There was no specific date for this redesignation, being accomplished as the equipment became available. A shortage of horses forced this action along with the effort demanded to care for and feed the animals. Additionally the new nature of close combat made them somewhat impractical for aggressive reconnaissance missions. The organization of all units was now standardized with two cyclist and a heavy squadron.





(Plate

The 5.Gebirgs-Division was formed in October 1940 with its regiments coming from contrasting sources. The experienced Gebirgsjäger-Regiment 100, one of the first two such regiments formed in the expanding German Army in 1935 and serving in Poland and France, was drawn from 1.Gebirgs-Division. Gebirgsjäger-Regiment 85 was a 10.Infanterie-Division unit made surplus when it was converted to motorized infantry, though the regiment had been raised in mountainous Bavaria.

Committed to Greece in Hitler's effort to bailout the humiliated Italians, the Division fought through the stoutly defended, mountainous Metaxes Line, an experience that would soon serve them well. The 5.Gebirgs-Division was alerted for Operation Mercury, the invasion of Crete, on 3 May 1941. The Luftwaffe 7.Fleiger-Division (later to become 1.Fallschirmjäger-Division) was to spearhead the assault by parachute and glider. The 5.Gebirgs-Division was selected for the follow-on air-landed and boatlifted operation due to its light equipment, capability to fight as battalion-size units, and its experience in mountain warfare against strong opposition. The island was defended by some 25,000 troops evacuated from the Greek mainland. Though poorly equipped due to the abandonment of much of their heavy equipment in Greece, the defending Australians and New Zealanders were expected to offer staunch resistance. The Gebirgsjägeren began referring to themselves in jest as the "5th Air Landing Naval Mountain Division".

The airborne assault began on 20 May, but II. and III.Bataillone, Gebirgsjäger-Regiment 100, along with elements of Gebirgsjäger-Regiment 85, had embarked by boat on the nights of the 19th and 20th. The Royal Navy intercepted and savaged this fleet on the night of 21/22 May. Of the over 2,200 Gebirgsjägeren embarked, hundreds were lost and the surviving boats fled to the mainland. Some 50 Gebirgsjägeren managed to swim to Crete and reported to their headquarters with most wearing only underwear and a sunburn, but with their rifles.

In the meantime the Division's advance echelon was air-landed at Maleme. The first unit was I.Bataillon, Gebirgsjäger-Regiment 100, which found the field was far from secure with New Zealanders firing on them as they disembarked from Ju52 transports. The Regiment's II.Bataillon (comprised of the convoy survivors of II. and III.Bataillone) soon followed, as did I.Bataillon, Gebirgsjäger-Regiment 85 and Gebirgs-Pionier-Bataillon 95. The remainder of the 85th air-landed on the 24th and 25th.

As the Gebirgsjägeren fought their way across the rugged terrain against determined resistance, they excelled in outmaneuvering movements. Marching with heavy loads in sweltering heat across the barren, rocky Cretan mountains, they continuously maneuvered to the defender's flanks and rear. Though often achieving tactical surprise by appearing unexpectedly in advantageous positions, the fight was far from over in those bitter mountain battles. The German defense was tenuous and their counterattacks persistent.

Artillery support was virtually nonexistent and air support was limited. The Gebirgsjägeren were forced to make maximum use of their own guns and mortars. A Gebirgsjäger-Kompanie, like all infantry and motorcycle rifle companies and cyclist squadrons had a 5cm M1936 light mortars (leichte Granatwerfer 36—leGrW36) assigned to each platoon and crewed by a five-man mortar team or troop (Trupp).

The leGrW36 was a heavy and complex little weapon, more so in both areas than their enemy's counterpart. The weapon had a limited down-range effect with its tiny 2-inch high velocity projectile (smoke was also available) containing less TNT filler than a stick hand grenade (4.5-oz opposed to 6-oz). Weighing in at 31 lbs), more than an MG34, it was hardly worth the effort to carry and its ammunition in view of its light punch and short 500 yd range. The weapon's complexity lay in its cross-leveling, elevation and traversing mechanisms coupled with its sight; later models replaced the complicated optical sight with a simple crosshair scale and a white line painted on the barrel as here. For these reasons, it was withdrawn from service in 1942 and replaced by the 8cm M1942 short mortar (KzGrW42), though many units continued to receive it.

The crew was issued M1939 carrying harnesses to transport the barrel, base plate, and 10-round ammunition cases. The weapon was constructed of a tubular steel pack frame with a unique support shelf and shoulder straps that attached to the wearer. With it came a canvas bag as used with the combat pack. The leichte Granatwerfer-Trupp wears heavy wool Gebirgs uniforms, their usual accessories, a brutally hot ensemble considered unsuitable for the extremely hot, humid conditions. Though steel helmet and protective masks were worn by the air-landed troops, the masks were soon discarded during the rigors of the mountain fighting.



VOLSTAD 95



(Plate 10)

The General Army Staff Clothing Office had sufficient warning of the deployment of German troops to North Africa that it was able to develop and produce complete ensembles of tropical uniforms and equipment. Again having to bailout the Italians, who were chased back to Libya by numerically inferior Commonwealth forces, the first elements of the German 5.leichte-Division began arriving in Tripoli on 14 February. Screening patrols were immediately deployed to the east, but contact was not made with the British until the 20th.

The uniquely organized 5.leichte Division was formed from a 3.Panzer-Division cadre the previous month. It deployed rapidly with virtually no training to prepare it for its strange new environment. Indeed, beyond some lectures on expected conditions, few units that make up the Afrika-Korps had any real specialized training. The Division was comprised of Panzer-Regiment 5, Aufklärung-Abteilung 3, Panzerjäger-Abteilung 39, I.Bataillon/Artillerie-Regiment 75, and Infanterie-Regiment 200 z.b.V. This last was a special staff controlling Machinengewehr-Bataillone 2 and 8, both motorized units providing the Division's infantry component. The Division headquarters was formed around the staff of 3.Panzer-Brigade, also formerly of 3.Panzer-Division. The Division possessed the full range of service support units to include an over abundance of water transport and supply units; one of the few areas in which the Germans were adequately prepared. They lacked proper rations to sustain troops in the desert and even deployed with standard wood-burning field kitchens, a worthless piece of equipment in the treeless desert.

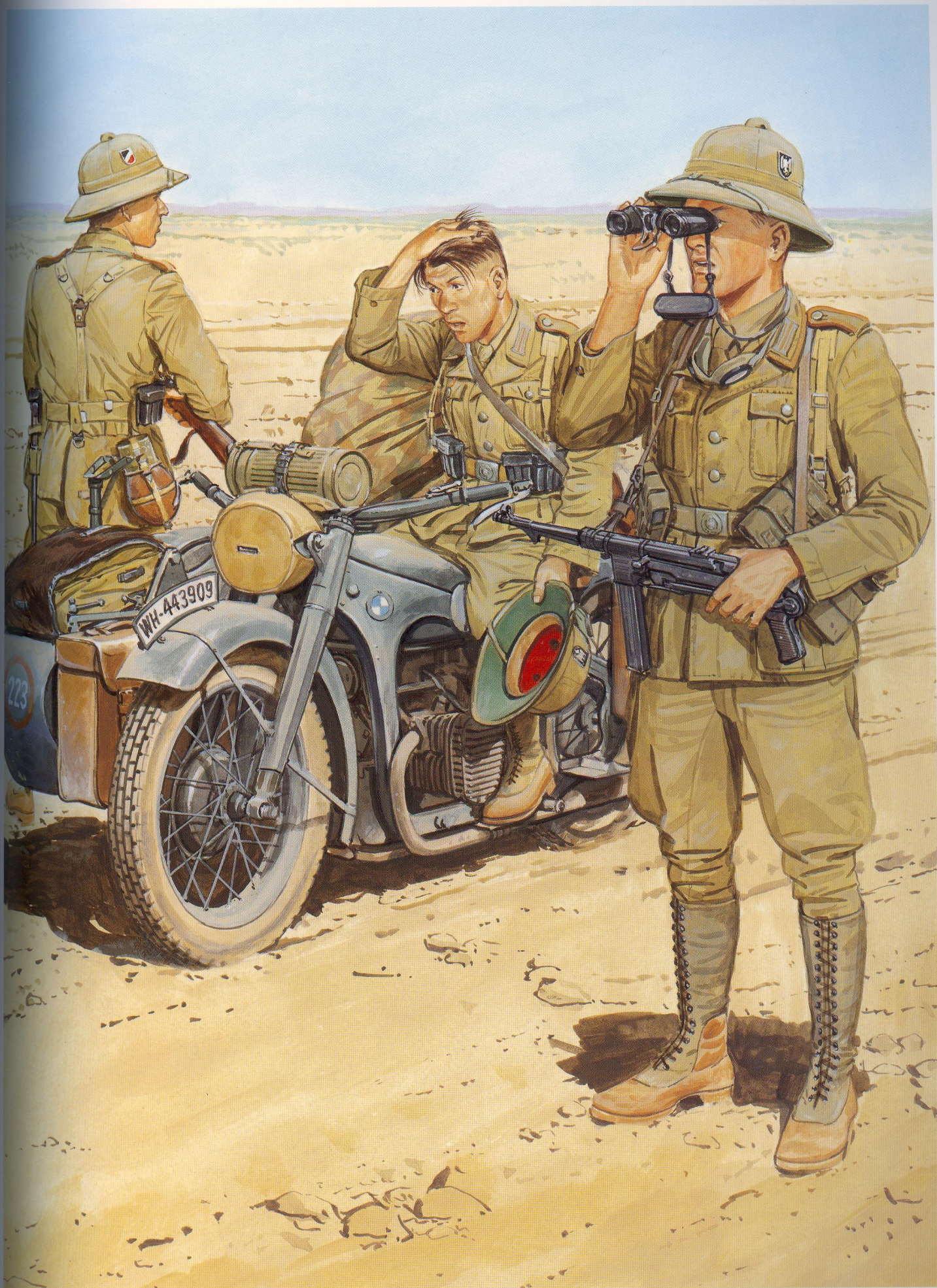
The tropical uniform (tropenanzug), as originally envisioned, displayed a distinct "British colonial" appearance with its pith helmet, necktie, and knee-length laced boots. In fact the Hamburg Tropical Institute modeled it after World War I-era German colonial uniforms used in Southwest Africa. These items did not long survive the realities of desert combat. The tie disappeared first, boots were often cut-down to ankle length, and the helmets replaced by the famous visored cap. Though retaining the general appearance of its Continental counterpart, the tropical uniform was made of lightweight reed green cotton twill. Trousers, breeches (worn by some officers), and shorts were provided along with a pullover shirt. Though hard-wearing, the fabric of all items was tightly woven resulting in an almost "airtight" uniform making it unduly hot in the day and offered no warmth at night. They rapidly faded to various shades of tan after prolonged exposure to sun, sweat, and

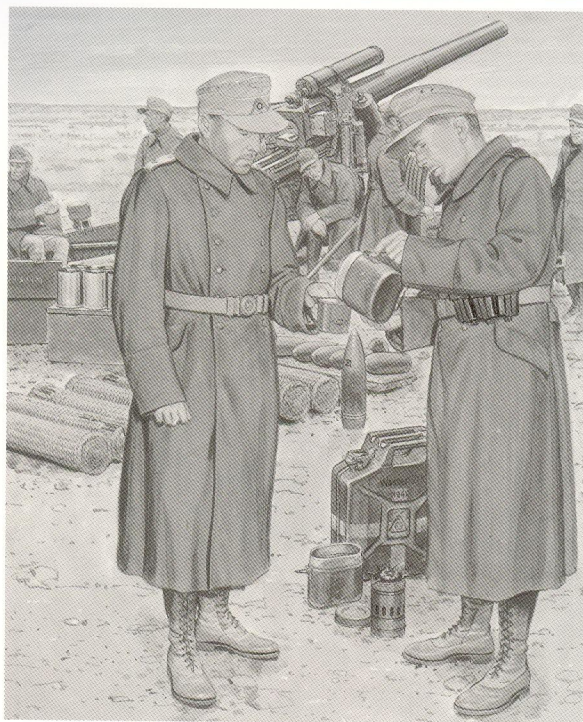
infrequent washing. This actually provided better camouflage in the desert than the reed green. The tropical greatcoat was of the same design and material as the field gray model, but was olive green.

A full range of special equipment items was manufactured for use in North Africa from late 1940-42 to withstand the rigors of a hot dry climate. Referred to as tropical equipment (tropisch Ausrüstung), they were fabricated principally of canvas and webbing in lieu of leather wherever possible. For almost all items of the basic Continental rifleman's equipment, there was a tropical counterpart. Most of this gear was reed green, though sand, tan, and light brown were used to lesser degrees.

A web belt and support straps, entrenching tool carrier, bayonet frog, water flask cover, and bread bag were provided in reed green or tan canvas and webbing. Water flask cups, cook pots, and gas mask cases were also painted these colors, as were many other equipment items. Aufklärung-Abteilung (motorisierte) 3 was different from other German reconnaissance units of the period. These units went through a bewildering series of internal reorganizations over the war years reflecting their evolving mission requirements. This unit was organized into armored scout car, motorcycle rifle, and heavy companies plus had a light artillery battery.

The 2.(Kradschützen)Kompanie was organized the same as those organic to Kradschützen-Bataillonen; only two of which served in North Africa, the 10th and 15th. A company was comprised of the company troop (or headquarters) (Kompanie-Trupp), heavy machine gun squad (schweren Machinengewehr-Gruppe), actually a "half platoon", three motorcycle rifle platoons (Kradschützen-Zügen), and the combat trains (Gefechtsstroß) with the maintenance and baggage elements. Its weapons included 12 light and four heavy machine guns plus three 5cm mortars. It was equipped with some 50 of these BMW 750cc twin-cylinder R1 motorcycles with sidecars plus a few solo motorcycles and light trucks. Four of these equipped each of the platoons' three 12-man squads. Motorcycles, proven effective in Europe, performed only marginally in desert sands.





(Plate 11)

The Deutsches Afrika-Korps was only the senior command headquarters of German units in North Africa until September 1941. On the 1st of that month Panzergruppe Afrika was activated, the first of what would become several reorganizations/redesignations of the German command. Subordinate to it was the original Afrika-Korps with 15. and 21. Panzer-Divisionen and Division z.b.V. Afrika (later redesignated 90. leichte-Afrika-Division) plus the Italian XXI Corps with four infantry divisions. Panzergruppe Afrika also included a wide range of supply, transport, medical, security, and other support units under Commandant of the Army Rear Area 556 (Kommandant des rückwärtigen Armeegebiets or Korück).

Also subordinate was Artillery Commander 104 (Artillerie-Kommandeur or Arko). This headquarters oversaw all non-divisional artillery units, which in this case included a diverse collection of battalions and batteries drawn from different sources. One of these units was Artillerie-Abteilung 408 comprised of the Stab-Batterie, 2. and 3. Batterien with six 15cm sFH18 heavy field howitzers, and 5. Batterie/Artillerie-Regiment 115 with three 21cm Mrs18 mortars. In North Africa, German divisional artillery was initially out-ranged by much of the British artillery. To counter this advantage, the Afrika-Korps soon began receiving heavier, long-range pieces. As with all weapon systems in the desert, long-range fires often proved decisive.

This 15cm sFH18 heavy field howitzer was the principal weapon of divisional artillery regiments' heavy battalion as well as being used by some non-divisional battalions. Its 13,000-meter range was intended to attack targets in the enemy's rear while 10.5cm light field howitzers engaged frontline targets.

When formed in early 1941, Arko 104 possessed the Staff of Artillerie-Regiment 221 with three staffs of heavy artillery battalions (Stab der schwerste Artillerie-Abteilungen 408, 528, and II/Artillerie-Regiment 115). These controlled some 11 organic and attached heavy artillery batteries.

The Germans rated artillery in two categories. Light artillery included the standard 10.5cm and little used 7.5cm field howitzers, which equipped the two or three light battalions of divisional artillery regiments. Heavy artillery covered a broad range of weapons including the 15cm field howitzer and 10cm (actually 10.5cm) cannon, which equipped the heavy battalion of divisional artillery regiments. Non-divisional heavy artillery units, assigned to armies and army groups, were armed with 15cm, 17cm and 21cm cannons

and 21cm mortars. Trucks or halftracks towed all German artillery employed in North Africa; there were no self-propelled and certainly no horse-drawn pieces.

German artillery classes were identified by different terminology than the U.S. and Britain classes of howitzers and guns. Mortars (Mörser), as opposed to infantry mortars (Granatwerfer), were large-caliber, short-barreled howitzers. German howitzers (Haubitze) were small-caliber, short-barreled weapons, the same as the Allied class of howitzers. Cannons (Kanone) could be small- or large-caliber, long-barreled guns.

Artillery ammunition was provided in a variety of types including high explosive, incendiary, smoke, concrete-piercing, armor-piercing (solid shot), anti-tank (hollow charge), and illuminating. Of course not all of these types were provided for all calibers of weapons. Artillery projectiles were issued in wicker baskets and the cartridges or propellant bags (depending on caliber) came in wooden boxes or metal cans.

The desert's extreme summer heat, often in excess of 115°F, was an initial concern of all forces committed to North Africa. Once acclimatized, both German and British troops experienced little difficulty in dealing with the heat. In fact, their performance refuted the Italian opinion that Northern Europeans could not withstand the high temperatures. The low temperature extremes did come as a surprise, though. Desert nights are quite cold, down to 40°F, necessitating the issue of wool greatcoats. These were worn at night along with wool sweaters and waist warmers. Three wool blankets were issued to each man, one to be used as a ground cloth to protect against dampness and ground cold. The temperature plummeted rapidly after sunset, but it was mid-morning before temperatures rose significantly to force greatcoats and other warm clothing to be shed.

If conditions allowed, hot meals were served for breakfast and supper while "cold" rations requiring no cooking were issued for lunch. Like the British, the Germans placed great emphasis on brewing up hot tea or coffee in the morning and evening using lightweight field stoves.

This Oberleutnant Batterieführer wears his standard shoulder cords on the greatcoat while the ammunition handler wears field gray Continental issue shoulder straps. Both display the artillery bright red Waffenfarbe.



Panzer-Regiment 5, 21.Panzer-Division, Sidi Rezegh, Libya, 23 November 1941



(Plate 12)

The 5.leichte-Division was intended only as a provisional formation allowing its rapid deployment to North Africa as a defensive blocking force. Under Rommel's dynamic leadership, it was soon transformed to an offensive force. As German strength grew in the theater, it was reorganized into a more permanent establishment, 21.Panzer-Division. Reorganized on 1 October 1941, most of the new division's units came from its predecessor, though sometimes redesignated. New units were also added, to include: Schützen-Regiment 104, Kradschützen-Bataillon 15 (both from 15.Panzer-Division, itself also part of the Afrika-Korps) and Artillerie-Regiment 155.

For the small Afrika-Korps to be effective against the numerically superior Commonwealth forces, mobility and firepower were essential. Virtually all units were motorized, there were then no foot-mobile infantry in the theater. The tank was to be the key weapon system for ground combat. However, until the end of 1942, the Germans fielded only four tank battalions (in two regiments, both short two companies) in North Africa.

The first of these, Panzer-Regiment 5, was equipped with 170 plus Pz.Kpfw.IIs, IIIs, and IVs when Rommel began his advance against the British in February 1941. Most Pz.Kpfw.IIs were withdrawn that summer. This force had risen to 249 tanks in Panzer-Regiment 5 and 8 by November when the British began their Operation Crusader offensive. However, only half of them were Pz.Kpfw.IIs and IVs, and these mounted only low velocity guns. The others were obsolete Pz.Kpfw.IIs backed by 146 virtually useless Italian machines. Over 700 Commonwealth tanks faced them. By the end of December, Rommel was forced to withdrawal, though inflicting serious losses on his enemy.

The first tanks shipped to Africa were woefully unfit for the duty. They lacked effective oil and air filters and their cooling systems failed to meet the demands placed on them. Due to sand, dust, and excessive heat, their engine life was cut by two thirds their expected usefulness. Additionally, adequate repair parts were not available. In order to maintain secrecy, all vehicles deployed to Libya retained their Continental dark gray finish. But, sand colored paint was not available at their destination and not made so until April. As an expedient, vehicles were coated with a film of oil and sand rubbed on, which once dried by the sun was quite durable.

Between the initial German successes and the December withdrawal, Panzer-Regiment 5 participated in the fighting all the way across Libya and reached Halfaya Pass, one of the few avenues of approach between northern Libya and Egypt. Operation Crusader began on 18 November, with 15. and 21.Panzer-Divisionen inflicting heavy losses on the British armor, but they too suffered greatly. By the 22nd the Germans still retained the initiative but the next day both Panzer-Divisionen and the Italian Division Corazzata (Armored) Ariete attacked straight into the now reinforced Commonwealth armor near Sidi Rezegh, southeast of Tobruk. Though Commonwealth losses were high, the Germans suffered heavily in both tanks and infantry. The New Zealand Division also captured the Afrika-Korps headquarters and Rommel's critical communications center. The Germans called the day Totensonntag (Sunday of Death). The Afrika-Korps fought on in spite of its severe losses, but by mid-December was forced to withdrawal allowing the British to finally relieve Tobruk. The Germans, unlike the British who were forced to retreat in May 1941, conducted a well-planned and orderly withdrawal finally digging in near El Agheila on 31 January.

The Panzertruppen in North Africa were outfitted with the same tropical uniform as other troops. Though some had originally arrived wearing their black wool uniforms, these were quickly shed. They did identify themselves by wearing their metal Death's Head insignia on the tropical tunic's lapels. The visorless field cap, more suitable in a tank's confines, was issued to them rather than the visored version given other troops. Some tankers retained their black caps though. In some non-armor units initially, officers wore the visored cap and enlisted men the visorless. This practice was short-lived due to the former cap's utility. Various colored, non-issue scarves were extremely popular and a necessity to ward off dust and flies. The Pz.Kpfw.III Panzerführer is equipped with the Funkhaube A radio/intercom headset.

The Germans provided a full range of insignia for the tropical uniform. Copper brown braid was used on NCOs' shoulder straps and collars while sleeve badges used backing cloth the same as the uniform's color. The double bar collar patches and national eagle were bluish gray, the latter on a sand backing. They were prescribed for all ranks, but some officers wore their Continental collar patches along with their standard shoulder cords.



Panzerjäger-Abteilung 33, 15.Panzer-Division, Sollum, Libya, 3 December 1941



(Plate 13)

One company of Panzerjäger-Abteilung (motorisierte) 33 was assigned to Vorhut Knabe, along with II/Infanterie-Regiment 104 and a tank platoon, at the beginning of December to lead the advance on Sollum. The remainder of Panzerjäger-Abteilung 33 operated with Vorhut Geissier on a similar mission. A Vorhut (vanguard) was a form of Kampfgruppe (battle group). In fact, Vorhut Knabe was formed the previous month as a Kampfgruppe, part of a force blocking the British relief of Tobruk. The Germans made increasing use of battle groups as the war progressed. Ranging in size from a reinforced company to brigade and even near divisional strength, they were task organized from an assortment of units to accomplish specific missions. Once the mission was completed the battle group was reorganized and re-tasked or dissolved. They were generally designated by their commander's name. The concept was extremely successful with even the U.S. Army adopting the principal in its task force concept. The British and Soviets used similar concepts as well, but the Germans employed the battle group on a much wider scale, and often, more effectively. This was due to German officers being specifically trained in the concept while other armies initially used such organizations on an ad hoc basis. With time, they too became equally proficient in their employment.

German anti-tank units, when first organized in 1934, were designated armor defense (Panzer-Abwehr). They, together with all armor, armor reconnaissance, rifle, and motorcycle rifle units, were part of the Armor Force (Panzerwaffe). In September 1939 the Panzerwaffe was consolidated with the remaining cavalry units to become the Mobile Troops (Schnelle Truppen). On 1 April 1940 all Panzer-Abwehr units were redesignated armor hunter, or anti-tank (Panzerjäger), to de-emphasize their defensive nature. One Panzerjäger-Abteilung was organic to each division to supplement the infantry component's anti-tank weapons.

Through 1941, most Panzerjäger-Abteilungen were equipped with the 3.7cm anti-tank gun. These were rapidly becoming obsolete as improved enemy armor appeared on battlefields. Panzerjäger-Abteilung 33 was one of the few to be equipped with more substantial weapons, plus possessed the added benefit of being self-propelled.

This was Germany's first of many attempts to field an improvised tank destroyer utilizing obsolete chassis and available anti-tank guns.

This resulted in the marriage of an impounded Czechoslovak Skoda 47mm vz 36L/43.4 anti-tank gun and a Pz.Kpfw.I Ausf.B tank chassis. When Germany took control of Czechoslovakia in 1938 it found itself in possession of a number of these effective weapons. These were impressed into service with some divisions' Panzer-Abwehr-Abteilungen as the 4.7cm Pak(t). In 1940 some of these were mounted on Pz.Kpfw.I chassis and four battalions were initially equipped with them. They were organized into three companies with six vehicles each. The Germans experienced some difficulties with this system due to its high profile, a liability in the desert, the Pz.Kpfw.I's poor inherent mobility, and comparatively low-velocity gun. They had a difficult time keeping up with Pz.Kpfw.III and tanks.

Panzer-Abwehr-Abteilung 33 was organized in October 1940 and assigned to 33.Infanterie-Division. The Battalion was redesignated Panzerjäger in April 1940 along with all other armor defense battalions. The Division was reorganized as 15.Panzer-Division in late 1940. In the meantime, the Battalion's 1.Kompanie was sent to North Africa with 5.leichte-Division. This company was reassigned from one of the original self-propelled anti-tank battalions, the 670th. The remainder of the Battalion deployed with 15.Panzer-Division in the spring of 1941.

The German uniform in North Africa had "devolved" considerably from that worn by those 5.leichte-Division troops making their first tentative probes toward the British in February. By now the visored cap was the trademark of the Afrika-Korps. Shirtsleeve order was common, but shorts were not widely worn in the forward areas. Shorts offered little leg protection and were to be worn with high, laced boots or knee socks, though sometimes they were not. Former Dutch pith helmets were issued to German troops in North Africa alongside the German model. Standard metropolitan colors and Wehrmacht eagle shields were fitted to the helmet's sides. The standard M1935 steel helmet was usually worn only when engaged in combat. Some units discarded it altogether because of its weight and heat conduction. Sand-color paint was usually applied to the helmets, often with sand sprinkled on for further camouflage and to reduce reflection. Shoulder straps and cords were fitted to the tropical shirt when the tunic was not worn. Anti-tank units used pink Waffenfarbe with a Gothic "P" device.



Schützen-Regiment 115, 15.Panzer-Division, Gazala, Libya, 16 December 1941



(Plate 14)

The 15.Panzer-Division was the second major Afrika-Korps formation to deploy to Tunisia with its first elements arriving in late April 1941. The entire Division was not in-place until June, though some units were in action by the end of April. Originally formed in 1936 as 33.Infanterie-Division, it was converted to Panzer on 1 November 1940.

The Rifle, or Schützen-Regiment, assigned to Panzer-Divisionen were fully motorized like motorized infantry regiments, but were trained to fight in concert with tanks. At this early date, they were not yet equipped with armored halftracks. A major difference between the two types of regiments was that motorized infantry had three battalions, organized almost identically to standard infantry, while most rifle regiments had two and no separate regimental companies. These battalions had three rifle companies, each with three 5cm mortars and 18 light and three heavy machine guns. A company's nine rifle squads were each transported in a light truck with two MG34s, one mounted on the truck and the other for dismounted use. The machine gun company had two heavy machine gun platoons and a platoon of six 8cm mortars. The heavy company possessed infantry gun (2 x 7.5cm), anti-tank (3 x 3.7cm), and pioneer platoons.

There were two schools of thought on the application of infantry firepower prevalent in World War II. The "British school" called for strictly controlled, highly accurate fire to engage specified targets with a minimum expenditure of ammunition. The "German school" allowed massed fires on identified targets or even areas suspected of sheltering the enemy. To accomplish this, German small units, i.e. groups, platoons, companies, and even battalions, built their base of fire around the machine gun. The German Army fielded a higher density of machine guns than any other army. These were found in infantry, rifle, mountain, cavalry, reconnaissance, motorcycle rifle, and pioneer units to support direct combat, as well as in headquarters, artillery and support units for self-defense.

The most widely issued machine gun was the 7.92mm MG34. This multi-purpose weapon could be used as a bipod-mounted light machine gun, a tripod-mounted heavy gun, an antiaircraft gun mounted on either a twin mount or special tripod, or a coaxial gun on tanks and other armored vehicles. Though expensive to produce, it had many advantages over similar weapons used by Germany's enemies. It was only a few pounds heavier than the U.S. and British

squad automatic weapons (BAR and Bren) plus boasted a quick change barrel and belt-feed. Even its heavy configuration was considerably lighter than U.S. and British heavy machine guns.

The light MG34s organic to rifle groups were backed by heavy versions in the battalion Maschinengewehr-Kompanie. The company's two schwere Maschinengewehr-Zügen each had two groups (sMG-Gruppe) with two MG34s each. Each gun was manned by a six-man troop (sMG-Trupp). While the troop used the same MG34 as rifle groups, they were burdened with a great deal of additional equipment: M1934 tripod (could be used for antiaircraft with an adaptor), M1934 or M1940 indirect and direct fire long-range optical sight, M14 or M1934 optical range finder, three spare barrels carried in single-barrel and two-barrel protectors, and M1934 carrying bags for M1934 or M1941 300-round cartridge containers. Ammunition was loaded in 50-round belts that could be linked together.

The tactical employment of light and heavy machine guns differed considerably. Rifle groups built their base of fire around the MG34 carrying it with them in the assault and emplacing it to cover their immediate sector in the defense. Heavy machine guns were usually detailed to support attacking companies from overwatch positions by placing suppressive fires on known or suspected enemy locations or protecting exposed flanks. In the defense they would deliver long-range fires on enemy avenues of approach as well as provide concentrated, sustained fires in crisscrossed patterns along the company/battalion front. In forests and built-up areas heavy machine guns could be employed as light guns to supplement the close-in fires of the groups' guns. Heavy machine guns were especially effective in the desert against dismounted infantry due to their ability to deliver long-range fires at high rates. With a cyclic rate of 800-900 rounds per minute, the MG34 could deliver a considerable amount of fire when compared to U.S. and British weapons, most of which had a rate in the order of 500 rounds. With the optical sight area fire targets could be engaged at up to 3,500 meters range.

This sMG-Trupp wears the pink Waffenfarbe worn by Panzer and Schützen units, but identified by a Gothic "S" to differentiate it from the former. The tropical uniform had evolved to a more practical style by this time.



VOLSTAD98

Infanterie-Regiment, somewhere in the USSR, Summer 1941



(Plate 15)

The unit, location, and date are immaterial. On 22 June 1941 Operation Barbarossa commenced. The largest and most devastating military campaign in history was launched at Hitler's whim. One hundred thirty-four German divisions and a massive support infrastructure, organized into seven armies and four army-size armor groups, plunged into the Russian vastness and ultimately devastation. The Germans launched the campaign with some three and a half million men, backed by almost Romanian and Finnish armies of a million and a half more.

The Germans relied much on the 17 armor, 13 motorized infantry and a single cavalry division to rupture the enemy's front and thrust deep into his bowels. But, the vast majority of the divisions were little different than their predecessors of the previous war. Besides the specialized divisions, four mountain and nine security, there were 90 infantry divisions. Though these possessed motorized elements, e.g. subordinate headquarters, anti-tank, engineer, signal and other support units; they relied principally on horses as prime movers. All the artillery battalions and supply columns were totally horse-drawn. Virtually every man in the division rode on trucks, wagons, horseback, motorcycles, and bicycles- virtually everyone but the soldiers of the division's 27 rifle and nine machine gun companies- they walked.

Marching deeper into Russia, endless, dust shrouded columns of men, horses, trucks, and other vehicles stretched from horizon to horizon. An infantry division in march column on a single road covered 40 kilometers. Armor and motorized divisions covered just under 100 kilometers.

To the German Landser (self-imposed slang term for the German soldier), Russia was as alien as the moon. Endless kilometers of empty steppes (Germany was densely populated), vast tangled virgin forests (Germany's were park-like with little underbrush), the squalor of peasant hovels, mass illiteracy, absence of any form of industry in the border regions, and crude dirt roads (most units were hundreds of kilometers into Russia before seeing one of asphalt), greeted the invaders. The senselessly repetitive human wave attacks and primitive conditions of the "worker's paradise" were in direct contrast to all that was familiar and sane.

The smallest German tactical unit was the rifle squad (squad or section) (Schützen-Gruppe), led by a junior sergeant (Unteroffizier), the Gruppenführer. The Gruppe was subdivided into a rifle troop

(Schützen-Trupp) with the deputy squad leader (stellvertretender Gruppenführer) and five riflemen (Schütze), and the machine gun troop (Maschinengewehr-Trupp) with a gunner (MG-Richtschütze) and two machine gun-riflemen (MG-Schütze). All were armed with the Kar.98k carbine, except the Gruppenführer with an MP-38 or MP-40 machine pistol and the MG-Richtschütze with the MG34 and a P08 or P38 pistol.

Three or four groups, depending on the unit, comprised a rifle platoon (Schützen-Zug) along with the platoon troop (Zug-Trupp), or headquarters, and a light mortar troop (leichte Granatwerfer-Trupp). Companies with only three squads per platoon also possessed a heavy machine gun squad with two heavy MG34s in the heavy role.

Rifle company troops were now equipped with an innovative light pack system, the "combat pack for infantry rifle companies" and its companion "support straps with auxiliary straps". Adopted in April 1939, in the war's early days both were in short supply. The principal component was a semi-rigid trapezoid-shaped web pack frame, which attached to the support straps behind the shoulders. The support straps' front straps fastened to either the cartridge pouches or to "D" ring loops fitted on the belt. At the bottom of the frame was a small pack bag, which served to redistribute some items from the bread bag, e.g. undershirt, carbine cleaning kit, eating utensils, fat container, Esbit stove and an emergency iron ration meat tin. The cook pot was strapped to the upper portion of the frame, above the tent-quarter and its accessory pouch, and the combat pack bag below the tent-quarter.

Fighting troops were also issued the M1939 pack introduced in conjunction with the combat pack and support straps. It fastened to the support straps as it did not possess integral shoulder straps like the earlier M1934 pack. Both models' back flap's were covered with unshaven calfskin to provide a degree of water repellency though some versions had only a canvas flap. These packs were not generally carried in combat, in which case some of their contents would be transferred to the bread bag or combat pack. Prescribed contents for the M1939 pack included: Laced-top shoes (polish cloth and brushes inside), cook pot (preserved bread inside), iron ration meat tin, tent accessory pouch, carbine cleaning kit (rolled in breech cover), wool socks, sweater (in fall and winter), undershirt, handkerchiefs, towel, and shaving, washing and sewing kits.





(Plate 16)

The concept of the infantry gun was not unique to the German Army, but they used it more widely than other armies. This unusual class of weapons was intended to be light in weight—to accompany infantry, simple to operate—requiring less training than an artillery piece, and capable of direct and indirect fires—for maximum flexibility in providing support. The requirement for such a weapon emerged from German experiences in World War I. Heavy artillery was not able to keep pace with infantry advancing across the Western Front's devastated ground. Nor was artillery accurate or responsive enough to place fires on small enemy positions, and lift it in time, when the infantry assaulted across the last 100 meters of machine gun-swept ground.

The 7.5cm leIG18 (leichte Infanterie-Geschütz) light infantry gun, introduced in 1932, fulfilled this requirement well. Its 880 lbs. weight could be manhandled by four of its six-man crew, though it was towed by two horses behind a gun limber with ammunition and equipment, or by a light truck. It was extremely compact and had a low silhouette allowing easy concealment; even its shield's scalloped design served to distort its silhouette. It could provide direct or indirect fires aimed at enemy bunkers, crew-served weapons positions, or occupied buildings. Besides a potent 12.2 lbs. high explosive projectile, almost twice as heavy as the 8cm mortar's, there was a hollow-charge round for use against hardened positions and armored vehicles. In the indirect fire role it had a range of 1,320 meters.

In the attack light infantry guns were attached to the assault battalions for direct and indirect fires against enemy positions. In the defense they were normally positioned in the rear to deliver indirect fire on likely enemy avenues of approach and targets of opportunity. For a brief period, they could achieve an impressive 15 to 20 rounds per minute. In North Africa, however, they were often emplaced to deliver direct fire and their positions changed frequently. They were especially useful for targets that were too close to safely use artillery. The infantry guns, coupled with mortars and machine guns, permitted an infantry battalion to place a devastating amount of fire on the enemy.

Besides the leIG18 fitted with pneumatic tires or wood-spoked wheels, there was the leGebIG18, "Geb" meaning Gebirgs—mountain. This model had wood-spoked wheels, no shield, a split, tubular trail, and could be broken down into six mule-pack loads.

The leIG18 was also found in reconnaissance and motorcycle rifle battalions plus rifle and cavalry regiments. In infantry regiments, these guns were organized into the 13. Infanterie-Geschütz-Kompanie. The 1. through 3. leichten Zügen each had two leIG18s while the schweren Zug was equipped with two 15cm sIG33 heavy infantry guns (schwere Infanterie-Geschütz). The light platoons were intended for attachment to the three infantry battalions while the heavy platoon provided general fire support or supported the main assault battalion.

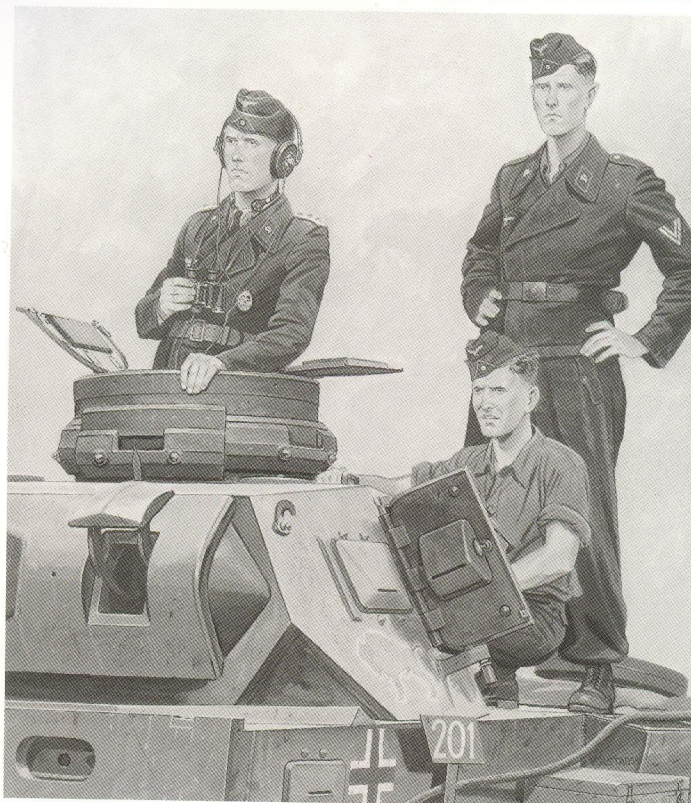
Companies within an infantry regiment were designated in numeric sequence. Companies were identified, e.g. 5. Kompanie, Infanterie-Regiment 79 (5./IR 79) as the initiated would know that it was the first company in II. Bataillon. Under this system, 1.-4. Kompanien were in I. Bataillon, 5.-8. were in II. Bataillon, and 9.-12. were in III. Bataillon. The 4., 8., and 12. Kompanien were machine gun companies. Two additional companies were under regimental control: 13. Infanterie-Geschütz- and 14. Panzerjäger-Kompanien.

Like most European armies, the German Army was still oriented to campaigning in the mild weather months with large-scale operations largely coming to a standstill in winter. In the field, the German soldier's principal means of shelter was the M1931 tent quarter (Zeltbahn 31). It was a triangular water-repellent cotton gabardine multipurpose shelter, ground cloth, and weather cape. On one side was printed a dark three-color camouflage pattern and a light pattern on the other. In the tent quarter's center was a slit for the wearer's head to protrude through. As a tent one or two tent-quarters could be rigged as a simple "fly" shelter. Four could be fastened together for a four-man pyramid tent. There were also standard designs for eight and 16-man tents. A set of tent equipment (Zeltausrüstung) was provided for this purpose with a tent rope, four section pole, and two stakes, all carried in a tent accessories pouch.

When worn as a weather cape (Regenmantel) three manners of wear were prescribed to provide maximum protection from the elements and freedom of movement: mounted, bicycle, and dismounted, as being fitted here. It was also used as a ground sheet or bedroll along with wool blankets and the greatcoat. One or two could be rigged as an expedient flotation device when filled with cut limbs or straw and rolled into a bundle.



Panzer-Regiment 7, 10.Panzer-Division, Smolensk, USSR, 16 July 1941



(Plate 17)

By now the German General Staff had realized the true potential and value of massed armor with its ability to penetrate enemy defenses and strike deep into their rear areas. Hitler ordered the ten existing 1. through 10.Panzer-Divisionen to be doubled in late 1941 to provide the 11th through 20th. This was accomplished by transferring some existing divisions' brigade staffs, second Panzer-Regimenter (from the five divisions possessing them), and non-divisional units to certain infantry divisions, which were then converted to Panzer.

This doubling of the Panzer-Divisionen may have looked good on paper, but what it actually achieved was to dilute the shock effect provided by massed armor. The end result was that there were only a few more tanks now in the field than before the expansion. These were now dispersed in weak divisions with only a single two-battalion armor regiment, about 150 tanks; seven regiments did have a III Abteilung for about 190 tanks. Two fully motorized two-battalion rifle regiments and a motorcycle rifle battalion backed the tanks. Only one of these rifle battalions was equipped with armored halftracks. With only seven maneuver battalions, the new Panzer-Divisionen still required the same full combat support and service units as an infantry division. Used to spearhead the offensive into the USSR, it was not long before many of these divisions were mere shells of their former selves. Their weak start strength of armor quickly dwindled away on the Russian steppes. They lacked staying power. It would have been far better to concentrate armor assets into larger formations capable of absorbing losses. By November the 17 committed Panzer-Divisionen had been reduced in strength and effectiveness to the equivalent of six. On the bright side, most Panzer-Abteilungen were now able to field two medium companies of Pz.Kpfw.III, with some Pz.Kpfw.II, and a heavy company with Pz.Kpfw.IVs. Tank platoons (Panzer-Zug) had three or four tanks in medium and heavy companies and five to seven in light companies.

At this time the Pz.Kpfw.III was the mainstay of the Panzertruppen. The poor choice of fitting it with a 3.7cm gun had been realized and the late production Pz.Kpfw.III Ausf.Es through H were fitted with the short 5cm KwK L/42 gun.

The heavy Pz.Kpfw.IV were envisioned as infantry support tanks, in effect, assault guns. Fitted with the short 7.5cm KwK 37 L/24 gun, the Stumpf (Stumpy), it was not well suited as a tank killer. The Germans then felt that their anti-tank units could best deal with

enemy tanks. Early tactics even called for the heavy tanks to advance no further than 100 meters ahead of the infantry and be prepared to provide fire support with their machine guns as well as the main gun. Besides inter-unit communications, the new radios with which they were fitted allowed tankers to act as artillery forward observers, again, in support of the infantry.

German tank crews were trained as a synchronized team. This began in an armor replacement battalion (Panzer-Erstatz-Abteilung), where the future tanker received his basic and specialist training. When not engaged in combat operations, tank crews spent a great deal of time practicing crew drills. In a tank-on-tank engagement the one to get off the first shot survived. The 10.Panzer-Division was formed as the ad hoc Panzer-Division Kempf in September 1939 for the Polish campaign and comprised of Army and Waffen-SS units. The principal Army contribution was the separate 4.Panzer-Brigade with Panzer-Regiment 7. This provided the cadre for 10.Panzer-Division in October. As part of Guderian's Panzergruppe 2, it had driven to Smolensk, USSR in a remarkable 28 days, a distance of 550 kilometers. Germany had concentrated its armor and other mobile forces into four armor groups in November 1940 to concentrate their capabilities.

In March 1940 the black enlisted and officer pattern field caps were authorized for Panzertruppen. The enlisted pattern, worn here by the gunner, was identical in cut to the field gray M1934. The officer's pattern was the same as the field gray M1938 version. The black protective cap was withdrawn from service in January 1941 as it prevented effective use of the current radio/intercom headset. It was retained for use by Pz.Kpfw.38(t) crews. The standard steel helmet was to be used in its place, but this too was ill suited for use with the Kopfhaube A headset. The issue of field gray uniforms (with the exception of the greatcoat) to Panzertruppen was ceased at the end of 1940.

This Kompanieführer, a Hauptmann, wears the Armor Battle Badge (Panzerkampfabzeichen) on his chest. This silver-colored badge was instituted in December 1939 for Panzer unit personnel that participated in three assaults on three different days. In June 1940, a bronze version was authorized for Panzer-Division rifle, motorcycle rifle, and reconnaissance unit personnel.



Panzer-Pionier-Bataillon 37, 1.Panzer-Division, Leningrad, USSR, 3 September 1941



(Plate 18)

The 400-day siege of Lenin's city had begun some two months previously, but the Germans continued to batter themselves against its impregnable defenses to serve Hitler's ego. As the autumn *rasputitsa*, the period of heavy rains turning the land into a sea of mud, the pioneers spearheaded countless assaults on the Soviet bunker lines and endless anti-tank ditches.

All German divisions possessed a well-armed pioneer battalion specialized in penetrating enemy defenses. German divisional pioneers were principally assault troops; construction was a secondary task. They were trained and equipped specifically to breach enemy minefields, anti-tank and anti-personnel obstacles; force the crossing of narrow gaps, and defeat field fortifications. To accomplish this task the pioneers were more heavily armed than a comparable size infantry unit and equipped with a wide range of demolition materials. They possessed no heavy equipment such as bulldozers and dump trucks as used by many Allied engineer units. The construction troops (*Bautruppen*) fulfilled that role.

The Panzer-Pionier-Bataillon was even more heavily armed than its infantry division counterpart, comprised of a staff, an armored pioneer company, two truck-mounted motorized light pioneer companies, a bridge column K (equipped with the bridging equipment K), and a motorized light pioneer column for materials and supplies transport.

The Panzer-Pionier-Kompanie (*gepanzert*) (armor pioneer company (armored)) was usually the 3.Kompanie, but this varied from battalion to battalion. It was the one company equipped with medium halftracks. The Panzer-Pioniere used two variants of this vehicle, the Pionier-Schützenpanzer (PiSPW Sd.Kfz.251/5) and the Pionier-Gerätewagen (PiGerSPW Sd.Kfz.251/7). This latter vehicle, depicted here, was used to transport two sections of three-meter assault bridging (*Aussenborde*) to permit the crossing of narrow ditches and gullies. Some companies also tested a pioneer tank platoon (*Pionierpanzerzug*) with 10 Pz.Kpfw.I and two Pz.Kpfw.II destroyer tanks (*Zerstörerpanzer*) modified to deliver heavy demolition charges.

The Panzer-Pionier-Kompanie was heavily armed with two heavy and 20 light MG34s, two 8cm sGrW34 mortars, three towed 2cm Flak 38 air defense cannons, and six man-packed M1935 or M1940 flamethrowers. All of these weapons were provided to reduce enemy fighting positions. Even the 2cm cannons were

employed to suppress bunker firing ports and fighting positions.

On 10 May 1940 the personnel of the Panzer-Pionier-Kompanien were authorized to wear the black Panzer uniform to include *Zerstörerpanzer* crewmen. Some units did not receive this uniform until 1943 and others never did wear it. Instead they may have retained the standard field gray uniform and in other cases they wore the field gray assault gun uniform with black piping. The black uniform was far too conspicuous when operating dismounted, but some Panzer-Pioneer units retained the black uniform until the war's end. As the pioneer's black *Waffenfarbe* would not be visible on this uniform, they were to use black and white twisted piping on the shoulder straps and cords (piping was used on officers' cords rather than the normal underlay cloth), collar patch edge, field cap chevron, and collar edging. Officers often used fine aluminum wire strands rather than the white. Junior NCO's and enlisted men's shoulder strap black battalion numbers were also outlined in white. This black and white piping was not a unique identification for the Panzer-Pioniere, but simply a means to make the black *Waffenfarbe* visible against the uniform. When wearing standard field gray uniforms, they reverted to the black piping.

In March 1941 a special pioneer assault pack (*Pioniersturmgepäck*) was introduced. This ensemble was composed of an assault pouch, two side pouches, and the belt supports for infantry, all coupled together by the standard waist belt. It was authorized on the basis of one per five pioneers and was analogous to the infantry's combat pack. Between the assault pouch and side pouches there was little space left on the waist belt to attach other equipment, such as the bread bag and entrenching tool. Production of the pioneer assault pack was ceased in 1944. The assault pouch was composed of three compartments. The upper one was for the cook pot. The center compartment was designed to hold two NbK39 smoke pots and the lower one a 3kg demolition charge.

The two side pouches were of different designs, but both had four cartridge pockets for a single five-round carbine-loading clip. The left pouch was divided into two compartments for stick and egg-type hand grenades. The right pouch had a single rubber-lined compartment for small demolition charges (M1928 100-gram boring cartridges, M1928 200-gram and M1924 1kg charges). On its front was a pocket for the gas mask.





(Plate 19)

The barren approaches to the Crimea Peninsula offered little concealment for the attacking 11.Armee. A quick thrust across the Nogay Steppes was planned. Though the fight was bitter, it was a mere skirmish when compared to the later fight for Sevastopol.

One of 11.Armee's five German divisions, the remainder of the Army was largely Romanian, was the 132nd. It was one of ten divisions formed in the 11th Wave over a year earlier in preparation for Operation Barbarossa. This wave's infantry regiments were formed by detaching the III.Bataillonen from earlier wave's regiments and consolidating them in new regiments. New III.Bataillonen were later formed for the old regiments. The battalions were drawn from pairs of divisions to supply a new one, e.g. 132.Infanterie-Division was supplied by 263. and 268.Infanterie-Divisionen.

Like the infantry regiments, 11th Wave divisions' other units were formed by detaching subunits from the same two divisions. Panzerjäger-Abteilung 132 was generated by the 263. and 268.Infanterie-Division's anti-armor battalions in October 1940. Most of these units were armed with Rheinmetall-Borsig 3.7cm Pak 35/36 L/45 armor defense cannon (Panzer-abwehr-kanone). Though well designed, it was soon outclassed by armor developments leading to the German soldier to call it the "Torklopfer" (Door knocker). Besides equipping divisional Panzerjäger-Abteilungen, the 3.7cm also armed infantry regiment Panzerjäger-Kompanien (14.Kp) and was found in rifle, mountain infantry, and cavalry regiments plus reconnaissance and motorcycle rifle battalions. A fixed version was mounted in Westwall (called the "Siegfried Line" by the Western Allies) bunkers and another on platoon commander's halftracks in armored rifle units.

Though it had only a short effective range and limited penetration (40mm at 400 meters at 30 degrees impact), it was used through the war against hardened positions and light armored vehicles. At least eight different vehicle mounted configurations existed. It was license-built by and was the standard anti-tank light gun of Italy, Japan, Netherlands, and the USSR, plus was closely copied by the U.S. in its M3 anti-tank gun.

To improve its capabilities a tungsten-cored round was developed (50mm at 400 meters at 30 degrees impact) along with the Stielgranate 41 (stick grenade). This in effect was a "rifle" grenade for the 3.7cm. It slipped on to the gun's barrel (with an

outer sleeve and barrel rod) and had a 159mm diameter hollow-charge warhead. Its range was up to about 800 meters, but was not too accurate at over 200. A 3.7cm high explosive-tracer round was also available.

Divisional Panzerjäger-Abteilungen possessed three companies with 12 guns each. Mountain divisions' battalions had only two companies. A company was usually attached to each infantry regiment. Panzerjäger-Kompanien, including those organic to infantry regiments, had four three-gun platoons. The platoons also possessed a light machine gun troop with an MG34. The guns were normally towed by light trucks and manned by a crew of six.

Anti-armor units were part of the Panzertruppen and as such wore pink Waffenfarbe with a Gothic "P" device. This did not apply to anti-armor subunits in infantry regiments, reconnaissance battalions, and other units. These personnel were specially trained to man the weapons, but wore the Waffenfarbe and devices of their parent unit.

As in any army rations were import to the soldiers' morale. German field rations, or more accurately, portions (Feldportionen—field rations, Feldrationen, were for animals) were rather Spartan when compared to U.S. and British equivalents. Local purchase, foraging, confiscation, and parcels from home supplemented these, except on the Eastern Front where they were restricted; every bit of transport space was needed for combat necessities (which resulted in a flourishing black market). Provisions I (Verpflegungssatz I), issued to troops in the combat zone, was composed of fresh, dried, tinned, and preserved foods. It was prepared by unit field kitchens, often in the form of stews and soups, supplemented by bread and potatoes.

The march provision (Marschverpflegung) was issued to troops in transit (foot, truck, rail) and intended to be eaten cold with no special preparation required. However, groups, gun crews, etc. Often pooled their portions along with other food they acquired and prepared it collectively. Distributed by unit mess personnel either on a daily or by-meal basis, it was composed of bread, cold meat and sausage and/or cheese, bread spreads (marmalade or "artificial" honey), substitute coffee or tea, sugar, and cigarettes. The components were tinned, in packets, wrapped in paper, or carried in the meat container. A field issue preserved black bread was packed in cardboard cartons. Soldiers also carried a small round fat container for cooking lard or butter.



Schützen-Regiment 4, 6.Panzer-Division, Lama River, USSR, 28 December 1941



(Plate 20)

The German General Staff had traditionally shown little interest in the experiences of those who had fought the Russians. The ordeals of the Swedes and Poles, the German's own experiences in World War I, and even the Soviet's recent difficulties fighting the Finns were ignored. The German plan for the winter of 1941/42 failed to face the realities of the Russian Winter. The German Army was ill prepared to survive, much less effectively fight, on Moscow's latitude—the same as Canada's Hudson Bay.

On a front exceeding 1,000 kilometers, the arrival of full winter was experienced at different times by the many units, but the first snows appeared on 12 September 1941. Heavy, cumulative snows appeared at the same time as the Pearl Harbor attack. Blizzards quickly followed, their high winds forming endless drifts greatly restricting movement. Temperatures of -20°F (29°C) were common with reports as low as -60°F (52°C).

The original German concept was to defeat the Red Army in the autumn and seize Leningrad and Kiev. Two-thirds of the invading divisions would be withdrawn and the remainder left as an occupation army. Of course Hitler's meddling threw this plan askew when he directed that the Crimea become the main objective in mid-July. At the beginning of October he ordered that the offensive be redirected to Moscow. This constant shifting of focus, forces, and logistics had as much to do with weakening German forces as the rebounding Red Army and the Russian Winter.

Winter clothing procurement was based on these projections, but even these meager allowances had not arrived by mid-December due to a breakdown of the logistics system. Senior German officers' complaints finally reached Hitler spurring the Nazi Party to imitate a Christmas winter clothing drive. But, the donated coats, sweaters, scarves, and gloves did not reach the front until February 1942 and much were of little use.

In the meantime, freezing German soldiers were lining uniforms with newspaper, stuffing boots with straw, and striping captured and dead Russians of their winter uniforms. By the year's end the Germans had lost over 400,000 irreplaceable troops dead, missing, captured, and disabled. A quarter of a million men suffered from frostbite and still more from other winter-related ailments. Divisions were struggling to hold unrealistically broad frontages against the increasingly frequent, and effective Soviet counterattacks. Most rifle companies fielded only 30 or 40 functional soldiers. Three of

LVI.Panzer-Korps' four Panzer-Divisionen possessed a total of only 34 tanks, the 6th had none.

In late December, the tankless 6.Panzer-Division was fighting a rear guard action covering the withdrawal of LVI.Panzer-Korps from Moscow. Schützen-Regiment 4 had successfully counterattacked a Soviet penetration of the Lama River Line the previous day. Finding shelter from the night's -40°F in local villages and farms, they counterattacked in the morning to encircle the remaining Soviets by noon. However, the Soviets had burned the villages in the recaptured area and the fighting positions were buried under fresh snow. The Regiment and accompanying Kradschützen-Battalion 6 were forced to withdraw to the previous night's positions in order to survive. This allowed the Soviets to consolidate their gains and continue their attack eventually forcing a general German withdrawal. The lack of suitable winter clothing and failure to find shelter, not the Soviet's military prowess, defeated the Germans.

By early winter many German soldiers had worn out their one pair of wool trousers. The only spare clothing they possessed was their thin cotton denim drill uniforms (Drillchanzug). Although a reed green version was introduced in 1940, many units still possessed the earlier off-white uniform. This, coupled with the German soldier's thin wool long underwear, field blouse, and unlined greatcoat, provided only limited protection from the brutal cold. Knit wool gloves and M1936 sweaters were in short supply. Issue scarves, toques, waistbands, and wristlets were not yet available. Likewise, neither were snow camouflage garments.

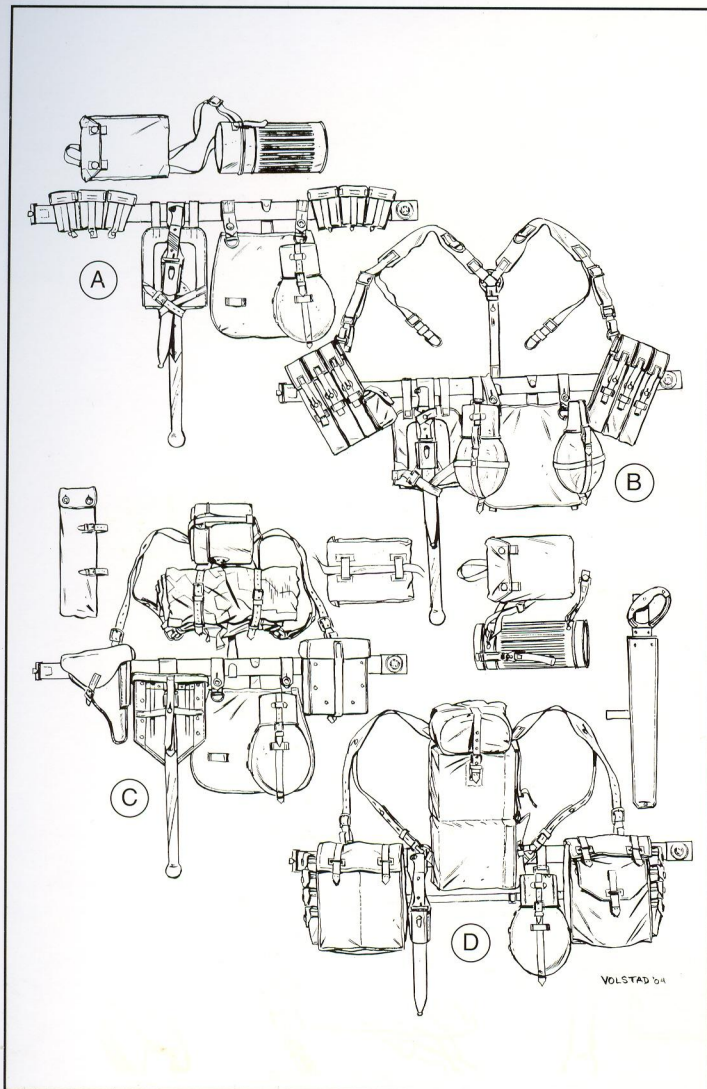
All manner of expedient snow camouflage were employed. Commandeered bed sheets and table clothes were the most common. The off-white drill tunic, worn tightly over the field blouse, offered little real camouflage or addition protection from the cold. A few units' rear services managed to fabricate white capes and coveralls.

Rifle and machine gun breeches were wrapped to prevent their freezing, grenade and mortar fuzes malfunctioned, artillery breechblocks and vehicle engines froze solid. Sunflower seed oil was found to be an effective weapon lubricant in the sub-zero conditions. Artillery rounds' effects were smothered in the deep snow. The snow even cushioned mines allowing Soviet human waves and tanks to pass over unscathed. But, the worst was yet to come.



VOLSTAD '04

Individual Field Equipment 1939-41



A: Infantryman's Equipment, 1939-40. A rifleman's individual field equipment (Feldausrüstung des Mannes) at the war's beginning included the leather belt and buckle (Koppel und Koppelschloss), M1911 cartridge pouches (Patronentasche 11), small entrenching tool and carrier (kleines Schanzzeug und Tasche), S84/98 sidearm (Seitengewehr—the Germans used the term "sidearm" rather than bayonet (Bajonett).) and sidearm carrier for dismounted troops (Seitengewehrtasche für Unberittene) (frog), carrying case for M1930 gas mask (Tragbüchse für Gasmasken 30) with a gas sheet (Gasplane) pouch on the shoulder strap, M1931 bread bag (Brotbeutel 31), and M1931 field flask and drinking cup (Feldflasche 31 und Trinkbecker). These items served as the basis for other fighting troops' equipment as well. Although some units had received the belt supports with auxiliary straps 1939, they were not yet in wide issue. The equipment's weight was borne by four removable wire side hooks positioned around the field tunic's waist. This in-turn was attached to integral, internal web support straps.

B: Tropical Equipment, 1940-41. A rifle squad leader's tropical equipment (tropisch Ausrüstung) in North Africa was fabricated almost entirely of canvas and webbing with little use of leather. Metal items were painted reed green, sand, or tan, as were sometimes continental issue leather items, which were sometime mixed with tropical equipment. It included the web tropical belt supports, web tropical belt and buckle, tropical MP38/MP40 machine pistol magazine pouches (Maschinenpistole Magazintaschen), small entrenching tool and tropical carrier, S84/98 bayonet and tropical sidearm carrier, carrying case for M1938 gas mask with tropical gas sheet on the shoulder strap, tropical bread bag, and two tropical field flasks (note the different types of drinking cups). One of these is fastened to an inverted supplementary loop (Aufschiebeschlaufen), actually intended as an attachment point

for the front straps of belt supports when cartridge pouches were not worn.

C: Machine Gunner's Equipment, 1940-41. A rifle group machine gunner's equipment included the belt supports with auxiliary straps (Koppeltraggestell mit Helfstageriemen), belt and buckle, M1934 replacement parts pouch (Ersatzstücketasche 34), P08 pistol holster (Pistolentaschen P08) with 9mm Luger, folding spade and carrier (Klappspaten und Tasche), M1938 gas mask case with gas sheet reversed (to limit bouncing) on the shoulder strap, M1931 bread bag, and M1931 field flask. To the side is the machine gun's M1934 tool kit case (Werkzeugtasche 34). Attached to the belt supports is the combat pack for infantry rifle companies (Gefechtsgepäck für Infanterie Schützenkompanien) comprised of a semi-rigid trapezoid-shaped web pack frame (Gurtbandtragegerüst) and a small bag for the combat pack (Beutel zum Gefechtsgepäck). Also fastened to it are a M1931 tent quarter (Zeltbahn 31) and M1931 cook pot (Kochgeschirr 31). Occasionally, the tent accessory pouch (Zeltzubehörtasche), pictured to the side, was strapped to the assembly.

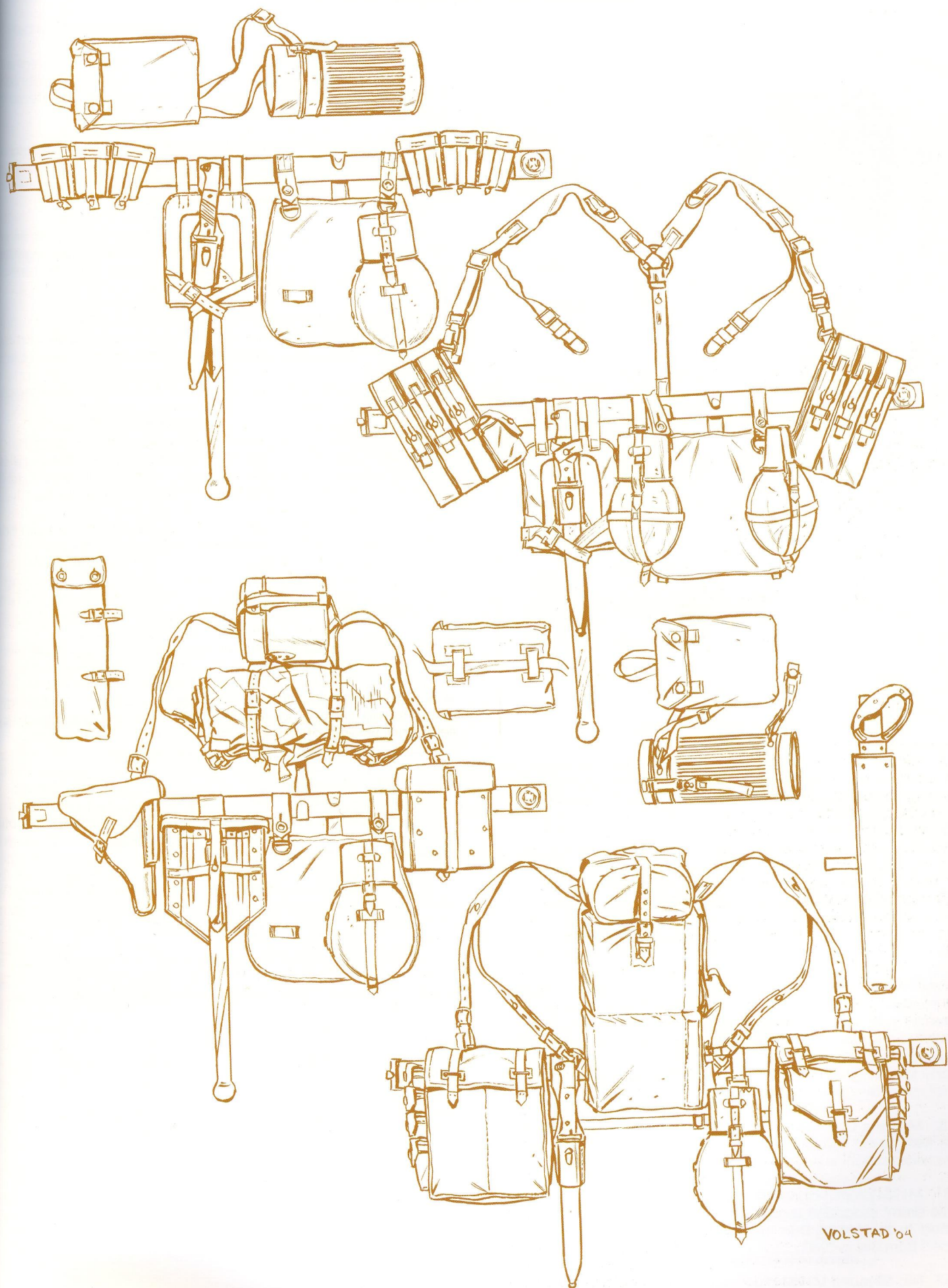
D: Assault Pioneer's Equipment, 1940-41. The pioneer assault pack (Pionierstrumgepäck) ensemble is fastened to a standard belt and belt supports for infantry (Koppeltraggestell für Infanterie) (these were the former belt supports with auxiliary straps, redesignated in April 1940). Equipment includes a hand grenade side pouch, S84/94 bayonet and sidearm carrier for mounted troops (Seitengewehrtasche für Berittene), assault pouch with (from top to bottom): cook pot, NbK39 smoke pot, and 3-kg demolition charge compartments; M1931 field flask attached to an inverted supplementary loop; and rubber-lined demolition charge and gas mask side pouch. The handsaw, carried in an artificial leather case, might be attached beside the bayonet.

Besides the assemblage of gear worn by combat troops, a variety of subsistence items were also carried. The bread bag's contents might include a full or half iron ration (Eiserne Portion), eating utensils, meat container (Fleischbüchse), fat box (Fettdose), small folding field stove (Esbit Kocker), fuel tablets (Esbit Brennstoff), M1934 carbine cleaning kit (Reinigungsgerät 34), washing kit (Waschzeug), shaving kit (Rasierzeug), sewing kit (Nähzeug), and field cap when not being worn. The personal kits were usually contained in small drawstring oilskin or cloth bags.

With the introduction of the combat pack, some of the items previously carried in the bread bag were redistributed to the pack's small bag, for example: undershirt, carbine cleaning kit, eating utensils, fat container, Esbit stove, one emergency iron ration meat tin, and tent quarter rope.

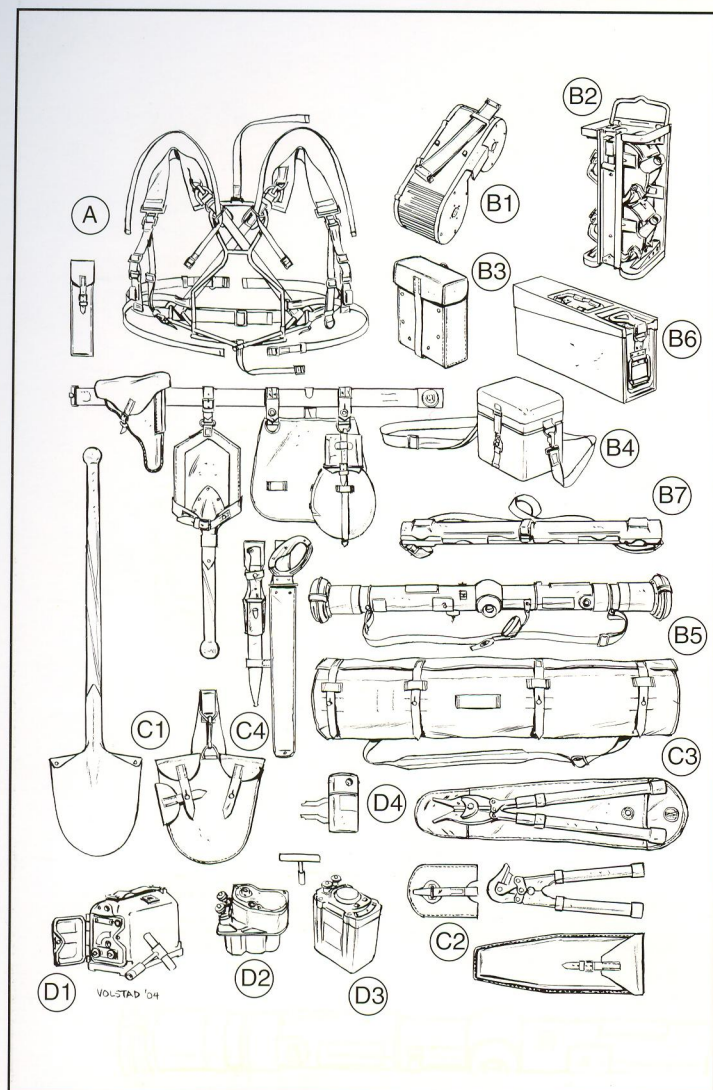
Extra clothing and subsistence items were carried in the M1934 or M1939 pack (Tornister 34 oder 39). Still further clothing items, not normally needed in the field, were carried in the M1931 clothing bag (Bekleidungssack 31), a small canvas satchel-like case. This pack was not normally carried in combat. It and the clothing bag were transported in the company train with other unit baggage and supplies. Soldiers not issued a pack or rucksack were issued two clothing bags.

Note: When identifying items attached to belts, the order of description is from the viewer's left to right.



VOLSTAD '04

Individual and Unit Field Equipment 1939-41



A. Light Mortarman's Equipment, 1939-41. Rifle platoon light mortar troops were issued four M1939 carrying harnesses (Traggestell 39) to transport the 5cm IGW36's barrel, base plate, and 10-round ammunition cases. It was constructed of a black tubular steel pack frame with a unique folding support shelf and fitted with web shoulder, securing, and waist straps. The canvas bag for the combat pack was issued as a component of the frame. Small numbers of these frames were issued to infantry units in lieu of the web combat pack in 1939 due to shortages of the latter. These were modified by the removal of the integral shoulder straps and hooked 'D' rings were fitted to permit the frame to be attached to the belt support straps.

Other items comprising this mortar gunner's equipment includes the belt and buckle, P08 pistol holster, spade for infantry and carrier (Spaten für Infanterie und Tasche), M1931 bread bag, 1-liter flask for mountain troops (Flasche für Gebirgstruppen), and range/charge calculation scale (Stabschußtafel). The spade for infantry was found in many former Austrian units early in the war. Manufacture of the flask for mountain troops was ceased in 1943.

B. Machine Gun Troop Equipment, 1939-41. MG34 machine gun troops were issued a variety of unit equipment. Those items provided only to heavy machine gun troops are marked with an asterisk (*).

B1. M1934 drum magazine (Patronentrommel 34). The 75-round "saddle drum" magazine required a specially modified feed cover be fitted to the MG34. Due to feed problems this magazine was dropped from use in 1940.

B2. Two 50-round M1934 drum magazines (Gurttrommel 34) are carried in this M1934 belt drum magazine carrier (Gurttrommelträger

34). The "basket drum" magazine held a standard 50-round belt.

B3. M1934 tool kit case (Werkzeugtasche 34). This contained a ruptured cartridge extractor, oil can, plastic sulphur container (mixed with oil as a lubricant), chamber brush, and air defense ring sight.

B4. M1934 optical sight and case (Zielfernrohr 34 und Tasche)*. A slightly improved M1940 version of this long-range, indirect fire sight also existed. Both possessed a self-illumination capability to allow their use at night.

B5. M1934 rangefinder and case (Entfernungsmesser 34 und Tasche)*. Production of this 70cm base coincidence rangefinder ceased during the war, but it remained in use. It was also issued to heavy mortar crews.

B6. M1941 cartridge container (Patronenkasten 41). These aluminum or steel ammunition cans held either six 50-round belts linked together or a single 250-round belt. A web strap assembly, the M1934 ammunition-carrying bag (Munitionstragegerät 34) could be used to carry one of these containers or a belt drum magazine carrier (see B2 above).

B7. M1934 one-barrel protector (Laufschüter 34). Machine gun troops were issued spare barrels; two for light machine guns and three for heavy. Heavy machine gun troops were usually issued the M1934 two-barrel protector (Laufbehälter 34)*, not pictured.

C. Pioneer Hand Tools, 1939-41. Besides heavier duty hand tools, pioneers were issued a number of lightweight tools:

C1. Pioneer spade with leather case. This item had a detachable blade and was carried attached to the pioneer's M1934 or M1939 pack.

C2. Short wire cutters with two types of leather cases. 16 inches long.

C3. Long wire cutters with a leather and canvas case. 24 inches long. Both types of wire cutters had electrically insulated handles.

C4. Hand saw with leather case, S84/98 bayonet, and sidearm carrier for mounted troops. 16-inch blade. This could be carried in lieu of the small entrenching tool.

D. Electric Igniter Apparatuses, 1939-41. Three types of blasting machines to electrically detonate demolition charges were in common use by pioneer troops. These blasting machines could generate enough current to simultaneously detonate up to 100 blasting caps. All were prided with a removable handle, which the demolitionist carried with him while connecting the changes for safety reasons.

D1. M1926 electric igniter apparatus (Glühzündapparat 26).

D2. M1937 electric igniter apparatus (Glühzündapparat 37).

D3. M1939 electric igniter apparatus (Glühzündapparat 39).

D4. M1926 test device for electric igniter apparatuses (Prüfgerät für Glühzündapparat 26). This electrical resistance-testing device was issued with the above three electric igniter apparatuses and was also a component of the M1940 electric demolition equipment kit (Zündgerät 40).

Note: The items described in this plate were of a variety of colors. Most metal items were painted field gray (gray green) or black. From 1941 it was common for them to be painted olive green. Metal items used in North Africa were often over-painted reed green, tan, or sand-color. During the Russian Winter, it was common to paint items white. Electric igniter apparatuses were black. Web components were field gray, reed green, or light brown. Leather components were usually black, but dark brown was also used, especially on earlier items.

German Unit Terms

The German Army employed a complex, but flexible, system of identifying unit size. These terms were divided into three main categories: Formations (Verbänden)—units of division and larger size, Units (Einheiten)—regiments and separate battalions, and Subunits or Troop Elements (Truppenteilen)—battalions, company-size and smaller units organic to Einheiten, which could not be identified without the inclusion of their parent unit's designation. Additionally, certain terms were reserved for specific branches.

German Singular German Plural	Transliteration	U.S. Equivalent	Commonwealth Equivalent
Trupp Trupps	Troop	Team or Crew	Detachment or Crew
Gruppe ¹ Gruppen	Group	Squad	Section
Staffel ² Staffeln	Echelon	Section	Detachment or Troop ²
Zug Zügen	File (Platoon)	Platoon	Platoon or Troop ²
Kompanie ³ Kompanien	Company	Company	Company
Batterie ⁴ Batterien	Battery	Battery	Battery
Schwadron ⁵ Schwadronen	Squadron	Troop	Squadron
Kolonne ⁶ Kolonnen	Column	Company	Company or Squadron ²
Bataillon ⁷ Bataillone	Battalion	Battalion	Battalion
Abteilung ⁸ Abteilungen	Subdivision	Battalion or Squadron ²	Regiment
Regiment Regimenter	Regiment	Regiment or Group	Brigade
Brigade Brigaden	Brigade	Brigade	Brigade or Group ²
Division Divisionen	Division	Division	Division
Korps Korps	Corps	Corps	Corps
Armee Armeen	Army	Field Army	Army
Heeresgruppe Heeresgruppen	Army Group	Army Group	Army Group

Notes:

1. Not to be confused with the same term when applied to larger formations, for example, Heeresgruppe, Panzergruppe, Kampfgruppe, etc.

2. Dependent on the unit's branch.

3. Used principally by infantry, rifles, pioneers, and signal troops.

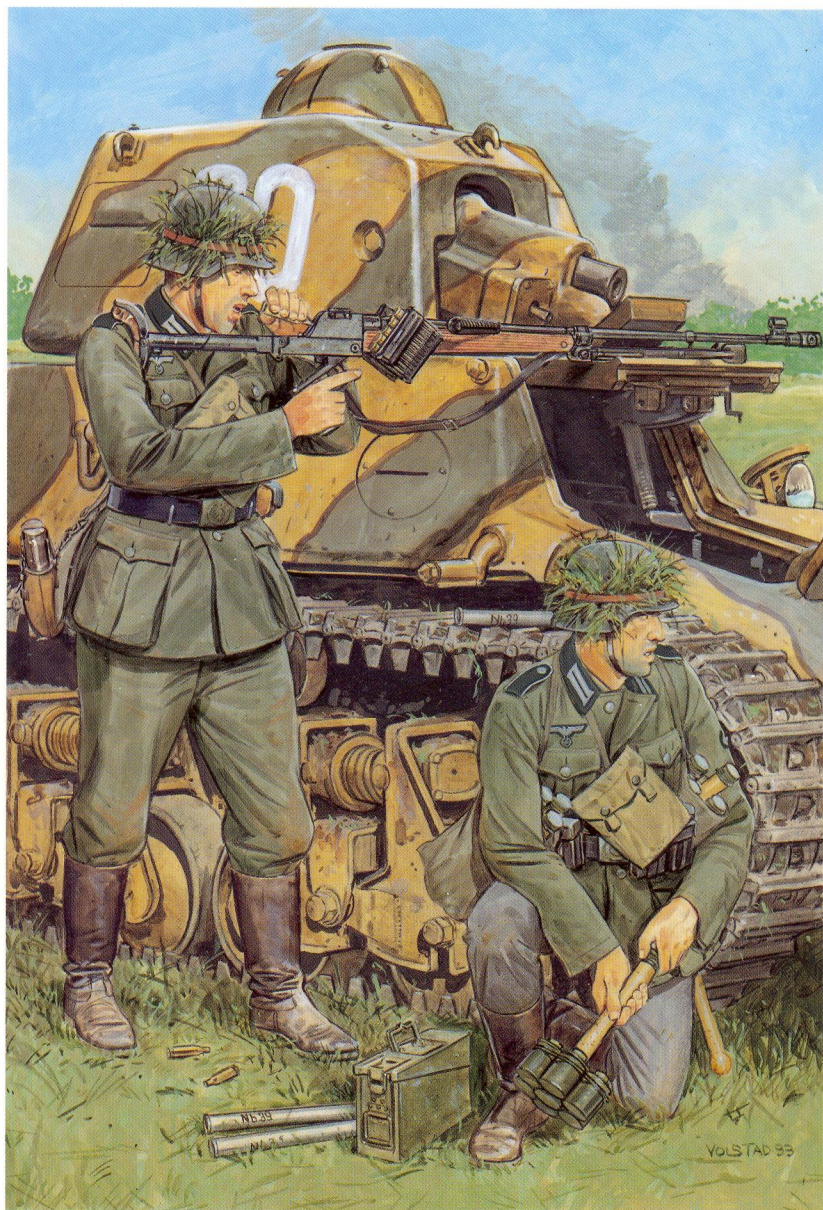
4. Used by company-size units of artillery and smoke troops.

5. Used by company-size units of cavalry, armor, and reconnaissance.

6. Used by company-size units of supply transport and bridge units.

7. Used by battalion-size units of infantry, rifles, and pioneers.

8. Used by battalion-size units of cavalry, armor, reconnaissance, armor defense, signal, smoke, and artillery.



ISBN 962-361-601-5

