

Organization of the German Infantry Battalion 1938 to 1945

A www.bayonetstrength.uk PDF

February 2019

Contents

	Page
i. Introduction	3
ii. German Army Ranks	4
iii. German Infantry Battalion structure and terminology	6
Overview	7
Evolution of the German Infantry Battalion (chart)	9
The elements of the Battalion	10
Annex A - Signal communication	32
Annex B - Weapons and ammunition	35
Annex C - Notes on the use of Volks Grenadier Battalions	50
Sources and acknowledgements	53

Introduction

This is my attempt at analysing the evolving organization, equipment and weapons of the German Infantry Battalion during the Second World War.

It covers the Battalion as would be found in the typical Infantry Division, with a slight nod to the Fusilier Battalion of the later war years. For the purposes of this examination the Battalion can be considered in time periods of the immediate pre-war and the invasion of Poland, the major campaigns and victories of 1940 to 1942, then the retreats and defeats of 1943 into 1944, and the final reckoning of 1945.

As far as possible, the information included here is obtained from contemporary documents, with a list of sources and acknowledgements provided at the end. This is a subject I have been dipping in and out of for a good twenty years now, and when I look at my list of sources and acknowledgements I know I am missing out more than a couple of both who deserve a mention, so drop me an email if you're reading this and think you're one of them.

It has become quite popular to refer to German Army units and subunits in their parent language even when writing in English; I am not doing that here. I will give the German language titles for the elements of the Battalion in that section, but will then use the most appropriate English language translation.

This document gives an outline of the development of the Battalion, before looking at its component subunits in more detail. Complete descriptions of the various German Infantry Battalions discussed here are available in PDF files accessible from the below linked area of the site.

[German Army organization during the Second World War](#)

There are always gaps in my understanding, so just after sources and acknowledgements is a list of topics I am still seeking information on. If anyone reading them can give me a pointer on where to look, or more direct assistance, I would be very interested to hear from you. See the Home page for contact info.

I hope this proves of use and interest to anyone interested in the subject.

Gary Kennedy

February 2019

German Army ranks

The German Army rank system is an entire research project in itself. I can only accommodate a functional description within this study of what is a labyrinthine subject. For an extended examination of German Army ranks, see here;

http://niehorster.org/011_germany/symbols/billets_discussed.htm

German Army ranks were divided into four categories, which are outlined below;

<i>Offiziere</i>	Commissioned officers
<i>Beamte</i>	Officials
<i>Unteroffiziere</i>	Non-commissioned officers
<i>Mannschaften</i>	Men

The categories of commissioned officers, non-commissioned officers and men are familiar enough when compared to British and United States ranks, that for officials is perhaps less so. *Beamte* had some equivalence to the role of a civil servant, and at the Regimental and Battalion levels were mostly personnel responsible for duties such as provisions and financial affairs.

Perhaps the hardest part of the German Army rank system to describe is the *Stellengruppe*, which roughly translates as 'position group'. German Army organizational tables did not specify a particular rank for something such as a command level or specialist post. Instead, the role was allocated a letter that pertained to a group of ranks, and anyone whose rank fell within that group could then occupy the role or post.

For officers and non-commissioned officers the position group letter signified the level of command they would be expected to demonstrate and corresponded to an organizational designation. Within the confines of the Division the commissioned officer *Stellengruppe* was;

D = Division

R = Regiment

B = Bataillon (Battalion)

K = Kompanie (Company)

Z = Zug (Platoon)

Non-commissioned officers were in either position group G or O. From late 1942 onwards it was increasingly common for an NCO in the O grouping to be recognised in the post of a Platoon commander in official organizational tables.

Below is an outline of the rank structure for commissioned officers within the expected confines of a Division (from senior to junior).

Commissioned Ranks **Stellengruppe** (*equivalent level of command*)

Generalleutnant	D
Generalmajor	D
Oberst	R
Oberstleutnant	B
Major	B
Hauptmann	K
Oberleutnant	Z
Leutnant	Z

For the purposes of this piece the most senior rank likely to be found in a German Infantry Regiment was Oberst.

The rank structure for German non-commissioned officers and men (again most senior to most junior) is given below;

NCO Ranks **Stellengruppe**

Hauptfeldwebel	O
Stabsfeldwebel	O
Oberfeldwebel	O
Feldwebel	O
Unterfeldwebel	G
Unteroffiziere	G

Other Ranks **Stellengruppe**

Stabsgefreiter	M
Obergefreiter	M
Gefreiter	M
Oberschütze	M
Schütze	M

The M group covered those men who would be Privates or Lance-corporals in British or Commonwealth service or Private or Private First Class in the United States. There was alternative nomenclature for *Schütze*, such as *Jäger* or *Fuselier*, and latterly Grenadier.

German Infantry Battalion structure and terminology

The German Army had its own vocabulary for unit designations, which does not easily translate to familiar British or US Army terms. For the purposes of this study, the following equivalents have been used.

German	British (Br) or US nearest equivalent
Gruppe	Section (Br), Squad (US)
Zug	Platoon (Br and US)
Kompanie	Company (Br and US)
Bataillon	Battalion (Br and US)
Regiment	Regiment (US) - (British equivalent would be an Infantry Brigade)
Staffel	No real equivalent; this was normally used in relation to parts of the Trains in German Infantry units

The German Army used the term *Gruppe* to describe a variety of subunits. In this examination Squad will be used in relation to the component *Gruppen* of the Rifle Platoon. A Mortar or MG *Gruppe* (generally a pair of the relevant weapons) will be referred to as a Section. *Staffel* is termed as a Detachment. In late 1942 German Infantry Regiments were renamed Grenadier Regiments. This did not have any organizational implications.

Unit and Subunit designations

Companies were numbered consecutively throughout the Regiment, using Arabic numerals, while Battalions were identified by Roman numerals. In late 1943, when the third Battalion of the Grenadier Regiment was deleted, its numbers were left vacant. Regimental Companies were included in the numbering system.

I Battalion	II Battalion	III Battalion
1 Company	5 Company	9 Company
2 Company	6 Company	10 Company
3 Company	7 Company	11 Company
4 Company	8 Company	12 Company
13 Infantry Gun Company	14 Infantry Anti-tank Company	

In shorthand format 10th Company, III Battalion of Infantry Regiment 131 would be referred to as 10./I.R.131, while 4th Company of Grenadier Regiment 151 would be 4./G.R.151. The parent Battalion of the Company would not need to be included as this would be known from the Company's number. The second Battalion of Infantry Regiment 111 would be II./I.R.111. Company numbers 4, 8 and 12 were reserved for Machine Gun or later Heavy Companies.

Organization of the German Infantry Battalion

1938 to 1945

Chronicling the organizational development of the German Infantry Battalion during the Second World War is not a straightforward undertaking.

As of 1st September 1939 there were two versions of the standard Infantry Battalion (there was also a Territorial model, which is not covered in this study). At the end of 1939 a revised organization was introduced that, subject to a number of important amendments, remained in place until the end of 1943.

In late 1943 came the *neu Art* or 'new Type' Grenadier Battalion, which was part of a wider Divisional level overhaul that was itself superseded in mid-1944 by the Type 44 organization. Finally, at the end of 1944, came the Volks Grenadier Battalion, which would have been the template for future Infantry units had the war continued.

Overview

The Battalion as detailed herein was that found in the Infantry Regiment of the Infantry Division. It should be noted that German unit organizations were frequently subject to some modification and this was equally true of the Infantry Regiment. A study of this type cannot claim to include all the variations likely to have existed but will reference the known cases ones where possible.

Certainly by 1943 there was a conscious effort to rein back the multitude of deviations in Divisional and Regimental organization. Even then as the overall approach was simplified there remained room for alterations and amendments.

Outline development - 1938 to 1945

At the end of 1937 the German Army introduced the organization that would take its Infantry Divisions into the coming war. Each Infantry Division was built around three Infantry Regiments, each with three Infantry Battalions, an Infantry Gun Company and an Infantry Anti-tank Company. The Infantry Battalion existed in two forms.

The type 'a' consisted of a Battalion Headquarters (which included the Commander's staff, a Communication Detachment and the Battalion Trains), three Rifle Companies and a Machine Gun Company. The Machine Gun (MG) Company had three Platoons, each of four weapons, while each Rifle Company had three Rifle Platoons, each of three Squads. All four of the Companies were to have the recently adopted MG34 machine gun, which could serve as either a sustained fire weapon in the MG Company, or a light machine gun in the Rifle Platoons.

The type 'b' Battalion used the same overall format of a Headquarters, three Rifle Companies and one MG Company. Unlike the type 'a' Battalion it was also issued with mortars. The type 'b' Machine Gun Company had two MG Platoons and a

Mortar Platoon of six 8-cm weapons. Each type 'b' Rifle Company added a 5-cm mortar to each Rifle Platoon, and also had its own MG Section of two weapons. In terms of firepower the 'b' Battalion was stronger than the 'a' by two heavy machine guns (total 12 for 'a' to 14 for 'b'), six 8-cm mortars and nine 5-cm mortars.

By the end of the Polish campaign the German Army had introduced a new format for the Infantry Battalion. This kept the same Battalion Headquarters while changing the MG Company to three MG Platoons of four guns each, plus a Mortar Platoon of six 8-cm weapons. The three Rifle Companies each still had three Platoons, now increased to four Squads, with a 5-cm mortar detachment per Platoon. An Anti-tank Rifle Squad of three weapons was also added to the Rifle Company Headquarters.

This same organization was adjusted slightly in early 1941 for the MG and Rifle Companies, followed by an updated Battalion Headquarters table in 1942. Officially these remained in force until late 1943 when the *neu Art (nA)*, or new Type, organization was introduced. Under *nA* the 8-cm Mortar Platoon in the MG Company was replaced by a 12-cm Mortar Platoon of four weapons. The displaced 8-cm mortars were allocated two per Rifle Company. Each Rifle Company discarded its anti-tank rifles and 5-cm mortars and the three Rifle Platoons dropped to three Squads each. In some respects the reallocation of mortars had already been sanctioned with amendments made to the Rifle and MG Companies in mid-1943.

In May 1944 the Regiment was reorganized again. For the Battalions this largely meant a rearrangement of its support weapons, under which each Rifle Company lost its 8-cm mortars and replaced them with two heavy machine guns. The MG Company was renamed the Heavy Company and now consisted of a 12-cm Mortar Platoon with four such weapons, an 8-cm Mortar Platoon with six weapons and a single MG Platoon with six heavy machine guns.

Towards the end of 1944 a new Battalion organization was introduced, the Volks Grenadier (which can roughly be translated as People's Grenadier). This signalled what was intended to be a major change in the German Infantry Battalion. Battalion Headquarters retained its command and communication role, while a new Supply Platoon took over the duties previously devolved out to the Company Trains.

The Heavy Company now had two MG Platoons of four guns each, an 8-cm Mortar Platoon (six weapons) and a 7.5-cm Infantry Gun Platoon of four guns. The 12-cm mortars previously found in the Battalions were transferred to the former Regimental Gun Company, who sent their 7.5-cm infantry guns down to the Battalions in return. There were still three Rifle Companies, each of three Platoons, but no Company level mortars or machine guns as previously. Two of the Platoons in each Rifle Company were designated *Sturm* (Assault) and were to be armed predominantly with the *Sturmgewehr44* rifle (actually available since 1943) while the third was a normal Rifle Platoon; both types of Platoon had three Squads. The original September 1944 KStN was quickly superseded by a revised issue that November.

Evolution of the German Infantry Battalion, 1938 to 1945

Detail	1938 'a'	1938 'b'	1940 'c'	1942 'c'	1943 nA	1944 nA	1945 Volks
i). Personnel							
Officers	21	21	22	22	13	13	14
<i>Beamte</i> (Officials)	2	2	2	2	2	2	1
NCOs ('O' group)	5	5	5	6	15	14	14
NCOs ('G' group)	102	124	122	129	96	99	81
Privates ('M' group)	585	668	677	690	600	580	532
Total, all ranks	715	820	828	849	726	708	642
ii). Transport							
Riding horses	46	36	35	35	16	15	9
Draught horses	82	84	80	111	159	150	116
Infantry carts	0	6	6	9	45	42	32
Infantry carts (as trailers)	0	0	0	0	46	57	32
Infantry wagons	32	34	32	51	48	45	34
Kitchens (horse-drawn)	5	5	5	5	5	5	4
Bicycles	39	39	42	43	17	17	27
Motorcycles, solo	4	4	7	4	4	4	2
Motorcycle combinations	1	1	1	1	0	0	0
<i>Kettenkrads</i> (tracked motorcycles)	0	0	0	0	1	1	1
Light cars	0	0	0	0	2	2	1
Trucks	5	5	5	5	0	0	0
Lorries (3-ton)	1	1	1	1	2	1	1
<i>Raupenschlepper Ost</i>	0	0	0	0	5	5	0
iii). Weapons							
Pistols	191	231	251	236	126	125	80
Machine pistols	0	0	48	70	126	127	88
Rifles	524	589	541	560	494	475	309
Assault rifles	0	0	0	0	0	0	165
Light machine guns	27	27	36	36	52	43	30
Heavy machine guns	12	14	12	12	12	12	8
5-cm mortars	9	9	9	9	0	0	0
8-cm mortars	6	6	6	6	6	6	6
12-cm mortars	0	0	0	0	4	4	0
7.5-cm infantry guns	0	0	0	0	0	0	4
Anti-tank rifles	0	0	9	9	0	0	0

The elements of the Battalion, 1938 to 1945

Below follows a more detailed examination of the subunits of the Battalion (defined herein as Companies, Platoons and Sections, and where applicable the various Trains). As some of these underwent little revision a single description can suffice, but for certain others greater depth is required.

Battalion Headquarters (*Stab eines Infanteriebataillons*) (1938 to 1945)

The Battalion command staff underwent relatively little change during the course of the war. The Battalion Commander was assisted by an Adjutant and an Ordnance Officer. This latter is perhaps better titled as an Orderly Officer, as he did not oversee ordnance of the explosive variety. By late 1943 he is also identified on KStN tables as being the Battalion Communication Officer.

Completing the officer staff was the Battalion Physician (Medical Officer), the most senior of who also served as the Regimental Physician (at least from 1942 onwards). There was no Battalion level medical detachment, rather a Medical NCO in Battalion Headquarters and one each Company to oversee its stretcher-bearers.

Battalion Headquarters had fairly little in the way of transport. Both the Commander and Adjutant were authorised two riding horses, the Ordnance Officer and Physician each one. By late 1943 this was reduced to a single horse each for the Commander and Adjutant only, though a light personnel car was added from this same date.

Completing Headquarters was the messenger staff. Until late war there were six messengers with bicycles, two with horses and two with solo motorcycles. By 1943 the six bicycle messengers were reduced to two, and two messengers with no transport were added. The remaining ever present member of Battalion Headquarters was the 'combat clerk', initially a Private but an NCO by 1942, who was responsible for unit reports.

Communication Detachment (*Nachrichtenstaffel*) (1938 to 1945)

In general terms the structure of the Infantry Battalion Communication Detachment remained unchanged until late 1943, with the introduction of the *nA* reorganization.

In 1937 the Detachment consisted of a small Headquarters controlling two Light Field Telephone Troops and four Pack Radio Troops. Headquarters was essentially the NCO in charge of the Detachment, one man (with bicycle) for general duties and the driver for the Detachment's Signal Equipment wagon. Each Telephone Troop had four men and each Pack Radio Troop just two men. Total strength was 19 all ranks with a horse-drawn wagon and one bicycle. The general dutyman post was deleted during 1942.

Under the *nA* reorganization of late 1943 the Detachment was increased to 25 all ranks, with the Battalion Ordnance Officer now also the communications officer.

The *nA* Detachment had three Light Field Cable Troops (one type '6 and two type '3', see the Signal Annex for an explanation of these designations) and four Pack Radio Troops. Its transport was now four horses, each towing an infantry cart and trailer, one such combination being allocated to each Telephone Troop with the fourth serving the four Radio Troops. With the Volks Grenadier organisation the Detachment added a two-man team manning a light machine gun for defence.

Battalion and Company Trains and Baggage

One thing that becomes apparent through any study of German unit organization is the importance of Trains down to Company level. Trains was originally the term applied to the line of wagons that carried baggage and supplies in the pre-mechanised era of warfare, and that was in large respect what it remained in the German Infantry arm of World War Two. In 1937 the Battalion Trains consisted of;

The Battle Train (Gefechtstross), whose personnel included cooks and armourers and also a blacksmith and wheelwright to keep horses and wagons maintained. Its transport was entirely horse-drawn and included a field kitchen.

The Rations Train (Verpflegungstross) was divided into *Staffel* I and II, the former with a horse-drawn wagon and the latter with two trucks.

The Baggage Train (Gepäcktrass) was motorised, having a light truck or lorry (in the 1.5-ton to 3-ton range) and included a tailor, shoemaker and clerk.

By 1942 there was provision for the trucks and lorries of the Rations and Baggage Trains to be replaced by horse-drawn wagons.

As well as the Battalion Trains, each Rifle Company had the same three elements, though on a somewhat reduced scale. The MG Company had slightly less again, using Battalion assets for its *Staffel* II and Baggage Train.

By late 1943, the *nA* reorganization had been introduced, which in part sought to reduce the number of personnel tied up in service roles. The Baggage Train was deleted however there was an increase in the horse-drawn transport found in the Rifle Platoons, which offset this reduction somewhat. Of more significance was the Volks Grenadier reorganization. This removed all Company level Trains and created a Supply Platoon within Battalion Headquarters, which centralised the equipment, rations and cooking duties into a single subunit.

A major aspect of the various Trains elements throughout German Divisions from 1942-43 onwards was the use of foreign volunteers to replace German personnel. These volunteers were more commonly known as *Hiwis*, a nickname derived from the full title of *Hilfswilliger*. They were principally but not exclusively employed as wagon drivers. Under the Type 1944 Division organization, a Grenadier Battalion of 708 all ranks was authorised 98 *Hiwis*, which was reduced substantially under the Volks Grenadier organization to 40 *Hiwis* in a Battalion of 642.

The Machine Gun (MG) Company (*Maschinengewehrkompanie*)

From May 1944 it was re-designated the Heavy Company (*Schwerekompanie*)

A total of six KStN tables were issued for the Machine Gun Company, later Heavy Company, between 1937 and 1945, which count only includes those pertaining to Infantry Battalions in Infantry Divisions proper. From May 1944 onwards the Machine Gun Company was renamed the Heavy Company, perhaps in recognition of the fact that machine guns now only accounted for a minority of its firepower.

The unit development examined here covers the following organizations;

October 1937 Machine Gun Company 'a' - three MG Platoons, each four guns.

October 1937 Machine Gun Company 'b' - two MG Platoons, each four guns and one Mortar Platoon with six 8-cm weapons.

December 1939 and February 1941 Machine Gun Company 'c' - three MG Platoons, each four guns and one Mortar Platoon with six 8-cm weapons. During 1943 some units re-equipped their Mortar Platoon with three or four 12-cm weapons.

December 1943 nA Machine Gun Company - three MG Platoons, each four guns and one Mortar Platoon with four 12-cm weapons (could be replaced by six 8-cm weapons where 12-cm mortars not available).

May 1944 Heavy Company - one MG Platoon with six guns, one Mortar Platoon with six 8-cm weapons and one Mortar Platoon with four 12-cm weapons (this could be replaced by a second 8-cm Platoon with six weapons in lieu of 12-cm).

September 1944 Volksgrenadier Heavy Company - two MG Platoons with four guns each, one Mortar Platoon with six 8-cm weapons and one Infantry Gun Platoon with four 7.5-cm weapons.

For the purposes of this study, the elements of the Company will be reviewed as Company Headquarters, the MG Platoon, the 8-cm Mortar Platoon and the 12-cm Mortar Platoon as detailed under each of these KStN tables. The Infantry Gun Platoon was a Regimental weapon for the majority of the war, and is better looked at in more detail in that context.

Company Headquarters (1937 to 1945) - along with its command function the Machine Gun Company Headquarters included a communication element.

The original 1937 Company had three Light Telephone Troops, which by 1941 had changed to six messengers who were responsible for three pairs of field telephones. From 1943 onwards Headquarters had two Light Field Cable Troops '6'. Under the nA organization there were also four radio operators, each with a one-man set which is described in more detail in the Signal Annex.

Machine Gun (MG) Platoon (1938 to 1945) - it is difficult to describe the MG Platoon without some repetition when it comes to the Rifle Platoon, as they each used the same machine gun but operated it in different ways.

Near enough every Army in Europe was using the same heavy machine gun in 1939 that it had been in 1918. In this instance, heavy machine gun refers to a weapon designed to deliver prolonged automatic fire rather than its calibre, which was usually the same as the rifles it operated alongside.

Weapons of this type though were also physically heavy, consisting of the gun, a tripod mount or small carriage and often a cooling system. This limited their mobility, as they took time to displace from one position to another in attack or defence. In the 1930s the German Army began to adopt a weapon that could serve as both a light machine in the Rifle Platoon and a heavy machine gun in the MG Company.

The weapon that emerged was the MG34, which fired the same 7.92-mm round as used by other German Army machine guns and rifles. In the MG Company it replaced the MG08/15, a conventional design of the Great War era that weighed approximately 58kg (some 26.5kg for the gun and 32kg for the tripod). By comparison the MG34 weighed approximately 31kg on its tripod mount, practically the same as the MG08/15 tripod alone.

Heavy machine guns of the early 1900s generally used a water cooling system to keep the barrel from overheating during prolonged periods of fire. This is what in part enabled such weapons to dominate infantry operations during the conflict of 1914 to 1918. The MG34 dispensed with water cooling and instead featured a rapid barrel change to tackle overheating.

For the majority of the war the MG Platoon of the Infantry Battalion was based on four guns, which could be handled as two 'half-Platoons' (later termed Groups) of two guns each. Initially the Group leaders were equipped with aiming circles, which enabled the guns to be used for indirect fire. There was also one range-taker per Group. By late 1943 the aiming circles were no longer shown on the organization or equipment tables and range-takers were down to one per Platoon.

The German Army used a variety of horse-drawn vehicles throughout the war, and these included specialised machine gun wagons. The Jf.5 consisted of a two-horse team pulling a single-axle driver's box, which itself towed a larger two-wheeled trailer. Inside the trailer was a mount for a pair of MG34 machine guns and room for a single gunner. The mount was fitted with an anti-aircraft sight so the machine guns could offer some degree of protection against enemy airpower. One Jf.5 was provided for each pair of guns on the early war organization with additional wagons carrying ammunition. By late 1943 transport was simplified, becoming a pair of Jf.8 infantry carts per gun, one towed by a horse with the second hitched as a trailer behind the first. The Volks Grenadier organization reduced transport to a single wagon and two carts and trailers, all held at Platoon Headquarters.

Mortar Platoon (8-cm) (1938 to 1945) - the handling and distribution of 8-cm mortars in the Infantry Battalion underwent a series of changes, particularly during the latter years of the war in Europe.

Under the 1937 KStN the Machine Gun Company 'a' did not include a Mortar Platoon while the Machine Gun Company 'b' had a Mortar Platoon with six 8-cm weapons. The same allocation was given in the superseding Machine Gun Company 'c' that emerged in the wake of the invasion of Poland, however the table carried a note that the actual issue of 8-cm mortars was dependent upon availability.

In its 1937 incarnation the Mortar Platoon consisted of a Headquarters with an Officer, Platoon NCO and three messengers, and three Groups. Each Group had an NCO, a rangetaker, two telephonists and two Troops, each of an NCO and six mortar crewmen serving a single 8-cm weapon. The mortars and ammunition were transported by horse-drawn vehicles. For each mortar there was a Jf.9 cart, which was pulled by a single horse lead by a walking driver, and for each Group there was a two-horse field wagon for ammunition.

Under the 1939 Machine Gun Company 'c' KStN, the Platoon was trimmed back slightly, with the six telephonists now counted among the overall 36 mortar crewmen. This table also noted that the telephonists were equipped with three 'light telephone equipment sets', which was presumably two field phones and wire per set.

At a time when four, or even two, mortars of such calibre was commonplace for Infantry Battalions of most major armies, the six of a German Infantry Battalion was ambitious. It does seem though that it could only be achieved through 1939 and into 1940 by concentrating the issue in a select number of Infantry Divisions, while Regiments in other formations went without any.

The typical handling of the 8-cm Mortar Platoon in the first half of the war has proven difficult to establish. Its organization certainly allowed for a Group of two weapons to be attached directly to each Rifle Company if required. In late 1943 the US Army produced a translation of what was described as a supplement to the original 1940 training manual for the Mortar Platoon, which appeared in its "Tactical and Technical trends" issue number 38 dated 18th November 1943.

This included extracts from the German document dated 8th February 1943, but not from the earlier 1940 publication. Under the 1943 guidance, the Group of two mortars was now regarded as the basic fire unit. The Mortar Platoon was generally anticipated as being used in a concentrated manner, with no less than two Groups (or a minimum of four mortars) being under the control of the Platoon commander. It refers to observation posts being established by the Platoon and Group commanders and to the use of voice control between OPs and the mortars. There is no example shown of any telephone equipment layout.

The US Army "Company Officer's Handbook of the German Army" dated 31st March 1944 also includes the following;

"In recent operations the Germans have tended to depart from their previous practice of employing 81-mm mortars (8-cm) by individual sections (two mortars in a section), or assigning them singly to companies and smaller units. They prefer to concentrate these weapons, placing emphasis on the devastating effect of concentrations" (page 27 refers). This was summarising experience in the latter half of 1943 in both Sicily and Italy.

The 8-cm mortar itself was of conventional design, consisting of a barrel, a bipod mount and baseplate. Maximum range is generally given as 2400m (1½ miles) though there are both British and US intelligence estimates published during 1943 that give much lower than this, possibly referring to perceived effective range. It fired both high explosive and smoke rounds.

During 1943 the German Army began to introduce the 12-cm mortar to its infantry units. As noted below these were initially captured Red Army weapons, which the Germans subsequently copied and produced themselves. Regiments receiving the 12-cm formed a Platoon of three or four such weapons in their MG Companies. The previous 8-cm Mortar Platoon was then broken up, with a Group of two 8-cm mortars added to each Rifle Company, which in turn would discard its 5-cm mortars (as discussed later in the Rifle Platoon section). This distribution of mortars was carried over into in the *nA* KStN tables of late 1943, with the proviso that in the absence of 12-cm weapons an 8-cm Mortar Platoon would be retained, in addition to the Mortar Group within each Rifle Company.

By mid-1944 the 8-cm mortars were once again centralised in a Platoon of six weapons in the now renamed Heavy Company. As before the Platoon was very much organized to operate as three Groups of two mortars each. For transport there were two horses per mortar, each pulling two Jf.8 infantry carts, while for each Group there was a two-horse wagon for ammunition and packs.

There had also been some developments in communications equipment. The 8-cm Mortar Platoon now had six *Feldfunksprecher b* radio sets each with a dedicated operator. The equipment table for the May 1944 Heavy Company though still shows three field telephone 'sets' and three lengths of field cable. While these are not shown as being assigned directly to the Platoon, assuming each telephone set had two handsets they would allow the usual line communication to be established by each Mortar Group.

By 1944 each 8-cm Mortar team was five men (exclusive of drivers), while Group Headquarters consisted of three NCOs, one each as Group leader, Position NCO and Aiming Circle NCO. This latter replaced the usual post of rangefinder operator. A tactical diagram of the 1944 Heavy Company shows each Group being reinforced by two radio operators and one messenger from Platoon Headquarters.

The final model of the 8-cm Mortar Platoon came with the Volks Grenadier Battalion. It still had six weapons but there were now just two Aiming Circle NCOs and one Position NCO in the Platoon and no messengers. There were still six radio operators, though the Heavy Company equipment table indicates the Platoon no longer had line equipment. Training literature recommended the Platoon was to be routinely handled as a single entity rather than in Groups of two mortars.

Mortar Platoon (12-cm) (1943 to 1945) - when the German Army invaded Russia in June 1941, it classed its 8-cm mortar as a heavy mortar. It soon encountered a new weapon adopted by the Red Army a few years earlier, the HM-38 120-mm mortar.

This was a heavy mortar in every sense, weighing some 280kg assembled, plus another 140kg for its two-wheel carriage. It had a maximum range of almost 6000m (just under 4 miles) which dwarfed that of the 8-cm mortar. As was normal, the German Army turned captured stocks of these weapons against their former owners, while more unusually they put the weapon into production without massively reworking the original design.

The 12-cm mortar was deployed in both independent Mortar Battalions (with 36 mortars in three Companies) and within Infantry Battalions of various types (including Mountain, Motorised and Panzer Grenadier).

In the Grenadier Battalion, the 12-cm Mortar Platoon was originally notified on a temporary KStN table, first issued in January 1943 before being updated that March. The Platoon could be either fully motorised or equipped with a mixture of vehicles and horses. It consisted of a Headquarters and four firing detachments, though this could be reduced to three if insufficient weapons were available. In either the part or fully motorised Platoon the towing vehicle was to be the *Raupenschlepper Ost*. This was a modification of an existing 1.5-ton capacity light truck that was driven by tracks rather than wheels, introduced due to experience on the Eastern Front.

The 1943 *nA* KStN for the Machine Gun Company showed the Platoon with only motorised transport. There was a light car for members of Platoon Headquarters, two motorcycle messengers, five RSOs (one per mortar and one for the telephone detachment) and two 3-ton lorries for ammunition, subsequently reduced to one. This organization also added three radio operators with the same *Feldfu* sets found in the 8-cm Platoon, plus a Light Field Cable Troop '6'.

7.5-cm Infantry Gun Platoon (1944-45) - with the introduction of the Volks Grenadier organization in late 1944, the 12-cm Mortar Platoons were removed from the Heavy Company of the Grenadier Battalion and formed into a new Regimental Heavy Company. In their place, each Volks Grenadier Battalion was authorised a Platoon of four 7.5-cm light infantry guns.

The original 7.5-cm light infantry gun (*leichte infanteriegeschütz 18*) had been adopted by the Germany Army in the late 1920s, and by 1937 the standard Infantry

Regiment included an Infantry Gun Company with six light 7.5-cm and two 15-cm heavy pieces, all horse-drawn. The IG18 was mounted on a two-wheeled carriage and all told weighed some 400kg. In 1940 a modernised weapon was designed, the Infantry Gun 42, which bore a closer resemblance to an anti-tank gun with its split trail carriage, but was not taken into general service.

By 1944 the idea of a new infantry gun was revived and with it the IG42. Its original carriage was replaced by that of the now obsolete *Pak35/36* 3.7-cm anti-tank gun, of which ready stocks were available. The new weapon was eventually titled the Infantry Gun 37 (calling it the 7.5-cm Pak 37 caused some understandable confusion). The IG42 had come in at 600kg complete on its purpose built carriage, which came down to 510kg for the IG 37 mated with the old anti-tank gun carriage.

Common to all three variants was the same range of 7.5-cm ammunition. There were two types of high explosive shell, which in the IG18 had approximate maximum ranges of 3400m and 3500m respectively. When fired from the IG42 or IG37 this was increased to over 5000m, however the sights fitted meant effective range was closer to 2500m. Also provided was a hollow-charge anti-tank round, optimistically given a range of 2500m, though some 400m was considered more normal.

In the Volks Grenadier Battalion the 7.5-cm infantry gun was towed, along with an ammunition limber, by two horses. The Platoon also had two ammunition wagons.

The Rifle Company (*Schützenkompanie*) (1938 to 1945)

The Rifle Company of the German Infantry Battalion underwent major changes in terms of both firepower and organization during the course of the war.

The progression as examined here covers the following Company organizations;

October 1937 Rifle Company 'a' - three Rifle Platoons.

October 1937 Rifle Company 'b' - three Rifle Platoons and one MG Group with two heavy machine guns.

December 1939 and February 1941 Rifle Company 'c' - three Rifle Platoons and one Anti-tank Rifle Squad with three weapons.

December 1943 nA Rifle Company - three Rifle Platoons and one Mortar Group with two 8-cm weapons.

May 1944 nA Rifle Company - three Rifle Platoons and one MG Group with two heavy machine guns.

November 1944 Volksgrenadier Rifle Company - with two Assault Platoons and one Rifle Platoon.

Rifle Company 'a' and 'b' (1938 to 1940)

In late 1937 the German Army issued two KStN for Rifle Companies, types 'a' and 'b', which would be in use during the invasion of Poland in September 1939. Generally speaking the type 'b' Rifle Company, and its associated type 'b' Machine Gun Company, were used by Infantry Battalions of 1st Wave Infantry Divisions. The type 'a' Rifle and Machine Gun Companies both lacked any mortars and were used by Infantry Battalions of 2nd and 4th Wave Infantry Divisions. 3rd Wave Divisions were akin to Territorial formations and are not detailed here.

The outline structure of the Rifle Company 'b' was a Headquarters, an MG Group of two heavy machine guns, and three Rifle Platoons, each of three Rifle Squads and a 5-cm Mortar Troop. In the Rifle Company 'a' there were no 5-cm mortars in the Rifle Platoons and no MG Group at Company level. Both Company types had the usual Battle, Rations and Baggage Trains.

The Rifle Platoon of 1938 consisted of a small Headquarters, three Rifle Squads and a 5-cm Mortar Troop (absent from the 'a' variation). The Platoon was commanded by an Officer with three messengers, one of whom was also a bugler. Each Rifle Squad was 13 men strong, consisting of an NCO as leader, a Light Machine Gun Troop (four men), a Rifle Troop (seven men) and an NCO Deputy Squad leader. Where present, the 5-cm Mortar Troop had an NCO and two mortar crewmen.

Pre-war the Platoon was equipped with three types of firearm, two of which had seen service since before the Great War of 1914-18. The *Pistole 08* was better known as the Luger. It was a semi-automatic pistol with an eight round capacity magazine and was the first gun to fire the 9-mm round known as Parabellum. Pistols were issued on a particularly large scale to German Army units and in the 1938 Rifle Platoon this included the Officer and three men in each LMG Troop.

Alongside the Luger was the Mauser bolt-action rifle, introduced into German use at the end of the 19th Century. The original *Gewehr 98* had been superseded by a shortened (*kurz*) *Karabiner 98k* before the war but both versions could be found in service. It fired a 7.92-mm round from an internal five round magazine.

As noted earlier, the key development in small arms for the German Army concerned its machine guns. In the mid 1930s the Army had used the MG13 as its light machine gun and the water cooled MG08/15 as its heavy machine gun. What it wanted however was a single weapon that could fulfil both roles, and this it found in the MG34, adopted a few years before the outbreak of war.

The MG34 combined features of both light and heavy machine guns. It was belt-fed, firing the same 7.92-mm round as the rifle; in the light role a single 50-round belt could be fitted, coiled inside a drum, while in the heavy role multiple belts could be joined together to allow for sustained periods of fire. There was a quick change barrel to address overheating without the need for water cooling. In the MG Platoon

and MG Group the MG34 was fired from a tripod, which allowed for fixed lines of fire or indirect fire as required, and was fitted with an optical sight. When used in the light role the sight and tripod were dispensed with and a simple bipod substituted.

In the 13-man Rifle Squad the gunner and two gun numbers were issued with pistols, the remaining gun number a rifle. The LMG Troop served a single MG34. The Squad leader and his Deputy and all seven riflemen carried Mauser rifles. In Platoon Headquarters the Officer had a pistol while all three messengers had rifles.

For the type 'b' Platoon there was also a 5-cm Mortar Troop. The *leichte Granatwerfer 36* was one of a class of light mortars introduced into various armies in the 1930s. The German entry fired a 5-cm bomb to approximately 500m. It was muzzle loaded and trigger fired, the barrel being fitted to a large rectangular baseplate. The three man team consisted of an NCO, gunner and assistant, all initially armed with rifles.

In the Rifle Company 'b' there was further fire support via an MG Group. This used the overall format of a 'half-Platoon' in the MG Company and served two weapons.

Rifle Company Headquarters was quite basic, with the Company commander, an NCO, five messengers on foot and four messengers with bicycles. There was also a holder for the Officer's riding horse. The Battle Train included a Medical NCO and four stretcher-bearers, with one of the latter normally directly attached to each Rifle Platoon. The Rations Train was horse-drawn and the Baggage Train motorised.

Rifle Company 'c' (1940 to 1942)

In early October 1939 a set of temporary Rifle Company and Machine Gun Company KStN were issued, both suffixed 'c'. The key changes were a reduction in the strength of the Rifle Squad to ten men, accompanied by the addition of a fourth Rifle Squad to each Rifle Platoon.

Under the 1937 KStN the Squad was subdivided into two distinct elements, the LMG Troop, acting under the direction of the Squad leader, and the Rifle Troop with the Deputy leader. With the revised organization of late 1939 this delineation was eliminated. The Rifle Squad was now an NCO Squad leader, six men armed with rifles and three men serving the Squad's light machine gun (two carrying pistols and the third a rifle). One of the riflemen now acted as Deputy Squad leader.

This represented a change from the previous approach, under which a part of the Squad provided a base of fire (the former LMG Troop) that enabled the manoeuvre element (the former Rifle Troop) to advance to close combat. The Squad leader was also to be armed with a new weapon, the MP40 submachine gun, or machine pistol in German parlance. There were a number of such weapons in German Army usage during the interwar years, which tended to be finely crafted items with wooden furniture that were wholly unsuited to mass production.

The MP38 was a major departure from these previous guns, using prefabricated metal stampings and plastic to speed manufacture. It fired the same 9-mm round as the Luger (and the models it replaced) from a straight 32-round capacity magazine. A redesign to the safety mechanism, which had proven somewhat unreliable, resulted in the MP40, which was in all other respects the same weapon.

In much post-war analysis it is generally offered that the light machine gun was so central to the German Rifle Squad that the riflemen themselves were deemed nothing more than ammunition carriers and escorts for the weapon. In early 1943 the US Army published a translation of parts of a German Army training document detailing how the Rifle Squad and Platoon were to be handled in action. This shows the Squad as ten men and the Platoon as four Squads (see below) so can be dated as relevant to the period 1940 to 1943 at least.

This manual emphasised the importance of superior firepower in the infantry battle, but recognised the need for both rifle and machine gun fire in achieving this aim.

“Employment of the Squad in surprise fire... Victory comes to the one who fires the largest number of well-aimed shots against his opponents in the shortest time.

“General principles... The squad is usually employed in combat as a unit. The division into two groups - a light machine gun group and a rifle group, with different combat missions - no longer applies. The fire fight is now conducted through the concerted effort of the entire squad... The employment of the light machine in the fire fight emphasizes the heaviest concentration of fire against the more threatening and most dangerous targets.

“Fire discipline... the rifleman fires upon that portion of the target designated to him... If the selection is left to the rifleman, he himself fires upon the target which interferes most with the accomplishment of the squad’s mission.”

(See sources at end of this piece for links to the full manual).

Alongside the updated Rifle Squad, there were a few amendments to Platoon Headquarters. From 1940 the Platoon commander was authorised an MP40 in addition to his pistol. A Platoon NCO was also added, who would take over the Platoon in the absence or loss of the commander. Perhaps a little oddly this NCO was armed only with a pistol. There were still three messengers and a 5-cm Mortar Troop, the gunner and assistant both now adopting pistols instead of rifles.

In the Rifle Company ‘c’ there was no Machine Gun Group, all such weapons being concentrated in the corresponding MG Company ‘c’. Each Rifle Company was now authorised a small Anti-tank Rifle Squad of an NCO and three teams, each with a gunner and assistant serving a single anti-tank rifle.

The German anti-tank rifle was the *Panzerbuchse* 38 or 39, the latter being a modification of the original model. It was a single shot weapon firing a 7.92-mm

round from an oversized cartridge case and was not interchangeable with the ammunition used by rifles and machine guns. Armour penetration at approximately 300m was reckoned as some 25-mm.

Company Headquarters was also amended somewhat. It added two NCOs, one overseeing transport and the other equipment issue, while the messengers were altered to four on foot and two with bicycles. The various Trains remained as before.

This temporary KStN was superseded by a more formal redraft at the beginning of 1941. The overall format of the Company remained the same but there were some changes to horse-drawn transport. Each Rifle Platoon added horse leader with a single draught horse that towed a pair of Jf.8 infantry carts. Company Headquarters was to add a four-horse wagon for ammunition and equipment, though this could be replaced by five single horses each with two infantry carts as in the Platoons. There was also an amendment that allowed for the Baggage Train to be horse-drawn as well. It was this organization that was in force at the beginning of 1941.

Eastern Front amendments (1942 to 1943)

When Nazi Germany launched its invasion of the Soviet Union in June 1941 it anticipated a brief campaign like those that had gone before it. The conflict in the East however turned into a protracted war of attrition against the Red Army, which continually staved off annihilation in the opening months before rebuilding its strength to a level where it was able to go on the offensive.

As losses mounted for the German Army it found itself looking for ways to reduce the strength of its fighting units while retaining their effectiveness. As noted earlier, one means was to employ foreign volunteers in place of German personnel, as drivers for horse-drawn vehicles or in non-combat posts in unit Trains, such as cooks.

Another introduction was that of *gesperrte Stellen* or 'blocked Posts'. This identified particular positions that remained on the KStN but were only filled by obtaining direct authorisation from senior command levels. The posts involved were marked on the KStN itself, sometimes in a less than legible manner, though a list for said posts was issued towards the end of 1942. In the Infantry Battalion this involved the deletion of the Platoon NCO in each Rifle Platoon, while in the MG Company each MG Platoon lost one Group leader and one rangetaker, and the Mortar Platoon its NCO.

There was also an increase in the firepower available to units. In the Rifle Company each Squad was issued a rifle grenade launcher, consisting of an adapter fitted to an otherwise standard K98 bolt action rifle. A very long list of rifle grenade variants was produced. In short these can be classified as high explosive, anti-tank, smoke and illuminating, though it was the anti-tank grenades which saw the most development. The same anti-tank grenades could also be fired from a modified version of the *Panzerbuchse*, the original 7.92-mm ammunition for which had long ceased to be of even marginal use against enemy armour.

Towards the end of 1943 came a more important organizational reform. It had become apparent that the 5-cm mortar was not effective enough to continue in use particularly as the introduction of the rifle grenade launcher meant individual Squads now had a means of projecting high explosive ammunition beyond the range of the average hand grenade. It was decided to begin to delete the 5-cm mortar entirely from the Rifle Platoon, and at the same time add a Group armed with two 8-cm mortars to the Rifle Company. The weapons were found from the MG Company, which in turn replaced them with its new 12-cm Mortar Platoon.

Unfortunately, the single page KStN table that detailed the organization and equipment of the Mortar Group does not appear to have survived. It is possible to fill in the blanks to a reasonable level of accuracy from looking at the development of Mortar Groups in other units. From this I would suggest the Group had a small Headquarters of an NCO and three men (including a horse and two infantry carts) and two detachments, each of an NCO and six men and two horses, each towing a pair of infantry carts.

As 1943 wore on into winter the German Army undertook the first major reorganization of its infantry arm, with a new series of KStN tables designed to reduce manpower while attempting to maintain firepower at previous levels.

neu Art and new directions (1943 to 1944)

The first drafts of the *neu Art* (new Type) KStN tables appeared in October 1943. By December 1943 full versions were issued, reorganizing all parts of the Infantry Regiment and eventually the Infantry Division.

The changes to the Rifle Company were significant. Each Rifle Squad was reduced from ten men to nine while each Rifle Platoon dropped from four Rifle Squads to three. The Anti-tank Rifle Squad was deleted and a Mortar Group handling two 8-cm weapons was standardised. Overall the authorised strength of the Rifle Company dropped from 190 all ranks to 147 Officers and men.

In the Rifle Squad, the deleted post is generally attributed to that of the second assistant on the light machine gun. I will have to admit however I cannot recall seeing this absolutely stated by a contemporary German source. Firepower for the Squad had altered slightly. The Squad leader retained a machine pistol and there was a second such weapon added for one of the riflemen. There was still a single light machine gun per Squad, the gunner carrying a pistol, leaving the remaining six men with rifles, one furnished with a grenade launcher.

Platoon Headquarters was also smaller, becoming just the leader and two messengers. The Platoon now counted on its strength a stretcher-bearer (with pistol) and two drivers. Transport was a single horse towing two Jf.8 infantry carts and a two-horse wagon that also pulled a third cart. Overall the Rifle Platoon was down from a previous authorised strength of 49 men to 33, a one third reduction. It

is generally offered that 'most' units were sufficiently short of personnel during 1942 into 1943 that a three Squad Rifle Platoon was already common enough for this to be a recognition of reality rather than a radical departure.

Two of the three Rifle Platoons were now commanded by Senior NCOs rather than commissioned officers. This meant the Rifle Company now had only two Officers, the junior of them also acting as its second-in-command.

New weapons had been introduced during 1942 and 1943. The long serving Luger pistol had long since been supplemented, but never replaced by, the Walther P38, a much safer weapon to handle than the *Pistole 08*. It too fired 9-mm ammunition from an eight round capacity magazine. The MP40 remained in widespread use, though large numbers of Red Army PPSH41 submachine guns had been taken into German service. This fired a Russian 7.62-mm pistol round from either a 71 round drum or a 35 round magazine; some captured models were converted to 9-mm ammunition.

The German Army had recognised the need to replace its bolt action weapons with semi-automatic variants. The first of these was the *Gewehr 41*, which fired the same 7.92-mm round as the Kar98 rifle from a large ten round capacity magazine. The G41 automatically ejected the spent cartridge case after each shot and chambered a new round. In service on the Eastern Front it proved extremely disappointing and was replaced by a weapons based on a Red Army model. The *Gewehr 43* took its operating system in large part from the Soviet SVT-40, and like the G41 used standard 7.92-mm ammunition, also from a ten round magazine.

Another important new weapon was the MG42. Intended as a replacement for the MG34 this was also a general purpose machine gun and could be used in the same manner, either on a bipod in the light role or mounted on a tripod for sustained fire. The MG42 had a much higher rate of fire than the earlier MG34 and began to see service during late 1943. While it was designed to be much easier to produce than the MG34 it never supplanted fully it.

As well as each Rifle Squad having one light machine gun, the December 1943 organization allowed for two more such weapons to be carried by each Rifle Platoon, designated as 'weapons reserve'. It is generally assumed that these two guns would be allocated out to the Rifle Squads to increase their firepower however the equipment table shows they were not provided with ammunition. This does indicate that they were intended more as replacement items than spare guns. By March 1944 the total was halved to one spare LMG by an amendment.

Rifle Company Headquarters consisted of the commander, a senior NCO, an NCO in charge of combat vehicles and a Medical NCO. There were three messengers, one with a bicycle, and four radio operators. The German Army was a major user of radio communication but did not introduce such equipment down to Rifle Company level until quite late on in the war. The set was the *Feldfunksprecher b* also used in

the Mortar Platoons. Each of the four Company Headquarters operators had one such set and two more were found in the 8-cm Mortar Group.

The Company Train was slimmed down by deleting the Baggage element, and all its vehicles were now horse-drawn, comprising four wagons and one field kitchen. It was also issued a single light machine gun, handled by a clerk when needed.

In May 1944 another KStN was issued that superseded that of December 1943. Company Headquarters and the Rifle Platoons remained as before (Platoons with a single spare LMG), while the Train was trimmed back further. The main difference was the substitution of the two 8-cm mortars for two heavy machine guns. This was achieved by a redistribution of existing weapons, allowing the 8-cm Mortar Platoon to be reformed in the newly designated Heavy Company, which halved its holding of machine guns from twelve to six to provide two guns per Rifle Company.

The allocation of semi-automatic rifles to the *nA* Rifle Company is somewhat hazy. A summary for the new Division of 1943 gives 25 per Rifle Company, 16 to be fitted with x4 telescopic sights, while a handwritten note to the May 1944 KStN reduces this to 19 semi-automatic rifles, ten of which were to have telescopic sights.

Another new weapon that was intended for the infantry arm deserves mention. For a long period the German Infantry Division has been surprisingly ill-served in terms of anti-tank guns. The Infantry Regiment included an Anti-tank Company, which could be equipped with a bewildering mixture of weapons (3.7-cm, 5-cm and 7.5-cm German Pak, captured and repurposed 7.62-cm Russian field cannons, various models of 4.7-cm gun), themselves issued in varying combinations to units. Unlike their major opponents the German Infantry Battalion did not include its own Anti-tank Platoon or equivalent, relying on their parent Regiment for such weapons.

The Rifle Squads were issued with an array of anti-tank rifle grenades, but some of these had very limited armour penetration. By 1943 a new series of dedicated munitions were appearing, using a hollow charge warhead that was a far greater threat to tanks than the rifle grenades. Initially called the *Faustpatrone*, or 'fist cartridge', they were renamed the *Panzerfaust*, or 'armoured fist'. The initial *Faustpatrone* could defeat some 140-mm of plate and had a short range of about 30 metres. There followed three more types, each with a 15-cm diameter warhead capable of penetrating approximately 200-mm of armour, to ranges respectively of 30, 60 and 100 metres. The *Panzerfaust* was a disposal weapon, so once fired the launch tube was discarded. It had a minimal signature and no back blast so was ideal for street fighting, and it also offered a very capable means of attacking fortified buildings.

The end in Europe (late 1944 into 1945)

In the autumn of 1944 the German Army introduced a revised Divisional organization under the title Volks Grenadier, or Peoples' Grenadier, which continued the trend set with the *neu Art* Division in terms of making reductions in personnel and transport.

The Volks Grenadier Company differed markedly from its predecessors. It retained the overall format of a Headquarters and three Platoons, each of three Squads, but there was no Company fire support element and the Trains had been removed to Battalion level, leaving the commander to focus fully on the fighting troops.

What helped set the Volks Grenadier Company apart was its Platoon organization. Previously all three Rifle Platoons in a Company had had the same authorised strength and weapons. Under the Volks Grenadier model, two of the Platoons were *Sturm* or Assault Platoons, with the third a standard Rifle Platoon. The Assault Platoons were to be armed with a weapon that had been introduced in limited numbers back in 1943 but had seen rather scattered deployment since.

At the beginning of the 20th century most armies were using rifles that fired a round of 7.62-mm to 7.92-mm calibre that was designed to be lethal at ranges counted in thousands of metres or yards. Experience was showing however that there were few opportunities on the battlefield to deliver such long range fires, and fewer individuals still who were capable of doing so, particularly in conscript armies.

That left most armies equipped with slow loading, bolt action rifles, firing ammunition that the average infantryman was not skilled enough to fully utilise. There had been much experimentation with semi-automatic rifles that used standard rifle rounds but the recoil of full powered ammunition presented a complication when used in self-loading rifles. The alternative was to use a different round, but that entailed retooling the machinery for a fundamental part of the munitions manufacturing base. In spite all of its economic and production travails this is what Nazi Germany opted for.

The weapon that emerged was the MP43. This shared many of the characteristics of a machine pistol, in that it was fed from a 30-round capacity magazine and could fire both single shots or fully automatic for burst fire. What was different was the ammunition. Rather than 9-mm pistol calibre rounds it fired a 7.92-mm 'intermediate' round, which was derived from the same 7.92-mm bullet of the Kar98 but the cartridge case was shortened from 57-mm to 33-mm. This reduced the propellant charge held and in turn effective range but also lessened the recoil created. It made for a weapon that was capable of delivering aimed fire out to 500 metres which in the close assault could be used in the same manner as a submachine gun. The MP43 was renamed the MP44 and finally the *Sturmgewehr 44* (assault rifle) or Stg44.

There were two KStN tables issued for the Volks Grenadier Rifle Company. The first is from September 1944 and shows the Company with two Machine Pistol Platoons and one Rifle Platoon; the table itself makes no distinction between MP40 machine

pistols and MP44 models. The second table is from November 1944 and shows the Company with two Assault Platoons and one Rifle Platoon; assault rifles are now specifically indicated in the weapons detail.

Under the September 1944 organization, the Machine Pistol (MP) Platoon consisted of three Squads and a Headquarters. Platoon Headquarters was largely as before, with a commander and two messengers (all with machine pistols), and a stretcher-bearer and two drivers for a two-horse wagon and two Jf.8 infantry carts. The first two Squads each had an NCO and eight men, all armed with machine pistols. The third Squad had a Squad leader and four men with machine pistols, one man with a light machine gun and three rifle grenadiers with bolt action rifles. Platoon Headquarters added two unallocated light machine guns, which were now provided with a normal issue of ammunition.

The third Rifle Platoon was a slightly modified version of that in the *nA* model. Each of its three Squads had two machine pistols, six rifles and one light machine gun, though all three of its grenade launchers were concentrated in the third Squad. Its Platoon Headquarters was the same as the Machine Pistol Platoons, but it had no spare light machine guns allotted.

The November 1944 KStN showed which men were to carry a 9-mm machine pistol and which an assault rifle. In the two Assault Platoons, the Squad size was reduced to eight men, with the first two Squads entirely armed with assault rifles. In the third Squad there were now two light machine guns, each with a gunner, while the Squad leader and remaining five men all had assault rifles. Two men acted as assistants to each light machine gunner, so the third Squad effectively became a fire support element. The three rifle grenadiers were moved to Platoon Headquarters, where the commander and both messengers had assault rifles. There was also a single spare light machine gun for use as required.

The Rifle Platoon had the same overall strength and firepower as previously, but reduced each Rifle Squad to eight men and also sent its three rifle grenadiers into Platoon Headquarters. In each of its three Squads the LMG team also consisted of the gunner and two assistants.

Company Headquarters consisted of the commander, NCO, the Medical NCO, three messengers and four radio operators and horse leader with two carts. Added were three NCOs previously found in the abolished Company Train. A new element was a group of six sharpshooters armed with rifles fitted with telescopic sights, one of who latterly became an NCO.

Had the war continued, the Volks Grenadier Division would have become the new standard for German Infantry. In the event it was introduced too late to be of great impact on either the Eastern or Western fronts. Just how many examples of the Stg44 were in the hands of troops by late 1944 remains a matter for debate.

The following is a brief summary of the changes in Rifle Platoon organization.

Rifle Platoon, under KStN 131b - October 1937

Personnel	No.	Pistol	Rifle	LMG	5-cm
Platoon Headquarters					
Platoon commander	1	1	-	-	-
Messenger	3	-	3	-	-
Light Mortar Troop					
Leader (NCO)	1	-	1	-	-
Gunner	1	-	1	-	1
Assistant	1	-	1	-	-
Total, Headquarters	7	1	6	-	1
Three Rifle Squads, each					
Squad leader (NCO)	1	-	1	-	-
Deputy leader (NCO)	1	-	1	-	-
Rifleman	7	-	7	-	-
Light machine gunner	1	1	-	1	-
Assistant gunner	3	2	1	-	-
Total, Squad	13	3	10	1	-
Total, Platoon	46	10	36	3	1

Rifle Platoon, under KStN 131a - October 1937

Personnel	No.	Pistol	Rifle	LMG
Platoon Headquarters				
Platoon commander	1	1	-	-
Messenger	3	-	3	-
Total, Headquarters	4	1	3	-
Three Rifle Squads, each				
Squad leader (NCO)	1	-	1	-
Deputy leader (NCO)	1	-	1	-
Rifleman	7	-	7	-
Light machine gunner	1	1	-	1
Assistant gunner	3	2	1	-
Total, Squad	13	3	10	1
Total, Platoon	43	10	33	3

Rifle Platoon, under KStN 131c - October 1939

Personnel	No.	Pistol	MP	Rifle	LMG	5-cm
Platoon Headquarters						
Platoon commander	1	1	1	-	-	-
Platoon NCO	1	1	-	-	-	-
Messenger	3	-	-	3	-	-
Light Mortar Troop						
Leader (NCO)	1	-	-	1	-	-
Gunner	1	1	-	-	-	1
Assistant	1	1	-	-	-	-
Total, Headquarters	8	4	1	4	-	1
Four Rifle Squads, each						
Squad leader (NCO)	1	-	1	-	-	-
Rifleman	6	-	-	6	-	-
Light machine gunner	1	1	-	-	1	-
Assistant gunner	2	1	-	1	-	-
Total, Squad	10	2	1	7	1	-
Total, Platoon	48	12	5	32	4	1

Rifle Platoon, under KStN 131c - February 1941

Personnel	No.	Pistol	MP	Rifle*	LMG	5-cm
Platoon Headquarters						
Platoon commander	1	1	1	-	-	-
Platoon NCO	1	1	-	-	-	-
Messenger	3	-	-	3	-	-
Horse leader	1	-	-	1	-	-
Horse, two Jf.8 infantry carts	-	-	-	-	-	-
Light Mortar Troop						
Leader (NCO)	1	-	-	1	-	-
Gunner	1	1	-	-	-	1
Assistant	1	1	-	-	-	-
Total, Headquarters	9	4	1	5	-	1
Four Rifle Squads, each						
Squad leader (NCO)	1	-	1	-	-	-
Rifleman	6	-	-	6	-	-
Light machine gunner	1	1	-	-	1	-
Assistant gunner	2	1	-	1	-	-
Total, Squad	10	2	1	7	1	-
Total, Platoon	49	12	5	33	4	1

*added 1 rifle grenade launcher per Squad during 1942

Rifle Platoon, under KStN 131n - December 1943

Personnel	No.	Pistol	MP	Rifle	LMG*
Platoon Headquarters					
Platoon commander	1	1	1	-	-
Messenger	2	-	-	2	-
Stretcher-bearer	1	1	-	-	-
Horse leader	1	-	-	1	-
Horse, two Jf.8 infantry carts	-	-	-	-	-
Wagon driver	1	-	-	1	-
Two horses, wagon and cart	-	-	-	-	2
Total, Headquarters	6	2	1	4	2
Three Rifle Squads, each					
Squad leader (NCO)	1	-	1	-	-
Rifleman	6	-	1	5	-
Light machine gunner	1	1	-	-	1
Assistant gunner	1	-	-	1	-
Total, Squad	9	1	2	6	1
Total, Platoon	33	5	7	22	5

*reduced to 1 LMG in Platoon HQ from March 1944

Rifle Platoon, under KStN 131n - May 1944

Personnel	No.	Pistol	MP	Rifle	LMG
Platoon Headquarters					
Platoon commander	1	1	1	-	-
Messenger	2	-	-	2	-
Stretcher-bearer	1	1	-	-	-
Horse leader	1	-	-	1	-
Horse, two Jf.8 infantry carts	-	-	-	-	-
Wagon driver	1	-	-	1	-
Two horses, wagon and cart	-	-	-	-	1
Total, Headquarters	6	2	1	4	1
Three Rifle Squads, each					
Squad leader (NCO)	1	-	1	-	-
Rifleman	6	-	1	5	-
Light machine gunner	1	1	-	-	1
Assistant gunner	1	-	-	1	-
Total, Squad	9	1	2	6	1
Total, Platoon	33	5	7	22	4

Rifle Platoon, under KStN 131V - September 1944

Personnel	No.	Pistol	MP	Rifle	LMG
Platoon Headquarters					
Platoon commander	1	-	1	-	-
Messenger	2	-	2	-	-
Stretcher-bearer	1	1	-	-	-
Horse leader	1	-	-	1	-
Horse, two Jf.8 infantry carts	-	-	-	-	-
Wagon driver	1	-	-	1	-
Two horses, wagon	-	-	-	-	-
Total, Headquarters	6	1	3	2	-
Three Squads, each					
Squad leader (NCO)	1	-	1	-	-
Rifleman*	6	-	1	5	-
Light machine gunner	1	1	-	-	1
Assistant gunner	1	-	-	1	-
Total, each Squad	9	1	2	6	1
Total, Platoon	33	4	9	20	3

* Third Rifle Squad includes 3 rifle grenade launchers

Machine Pistol Platoon, under KStN 131V - September 1944

Personnel	No.	Pistol	MP	Rifle	LMG
Platoon Headquarters					
Platoon commander	1	-	1	-	-
Messenger	2	-	2	-	-
Stretcher-bearer	1	1	-	-	-
Horse leader	1	-	-	1	-
Horse, two Jf.8 infantry carts	-	-	-	-	-
Wagon driver	1	-	-	1	-
Two horses, wagon	-	-	-	-	2
Total, Headquarters	6	1	3	2	2
Two Assault Squads, each					
Squad leader (NCO)	1	-	1	-	-
Rifleman	8	-	8	-	-
Total, each Squad	9	-	9	-	-
Rifle Squad					
Squad leader (NCO)	1	-	1	-	-
Rifleman*	6	-	3	3	-
Light machine gunner	1	1	-	-	1
Assistant gunner	1	-	1	-	-
Total, Squad	9	1	5	3	1
Total, Platoon	33	2	26	5	3

* the Rifle Squad includes 3 rifle grenade launchers

Rifle Platoon, under KStN 131V - November 1944

Personnel	No.	Pistol	MP	Rifle	Stg44	LMG
Platoon Headquarters						
Platoon commander	1	-	1	-	-	-
Messenger	2	-	2	-	-	-
Stretcher-bearer	1	1	-	-	-	-
Rifle grenadier	3	-	-	3	-	-
Horse leader	1	-	-	1	-	-
Horse, two Jf.8 infantry carts	-	-	-	-	-	-
Wagon driver	1	-	-	1	-	-
Two horses, wagon	-	-	-	-	-	-
Total, Headquarters	9	1	3	5	-	-
Three Rifle Squads, each						
Squad leader (NCO)	1	-	1	-	-	-
Rifleman	4	-	1	3	-	-
Light machine gunner	1	1	-	-	-	1
Assistant gunner	2	-	-	2	-	-
Total, Squad	8	1	2	5	-	1
Total, Platoon	33	4	9	20	-	3

Assault Platoon, under KStN 131V - November 1944

Personnel	No.	Pistol	MP	Rifle	Stg44	LMG
Platoon Headquarters						
Platoon commander	1	-	-	-	1	-
Messenger	2	-	-	-	2	-
Stretcher-bearer	1	1	-	-	-	-
Rifle grenadier	3	-	-	3	-	-
Horse leader	1	-	-	1	-	-
Horse, two Jf.8 infantry carts	-	-	-	-	-	-
Wagon driver	1	-	-	1	-	-
Two horses, wagon	-	-	-	-	-	1
Total, Headquarters	9	1	-	5	3	1
Two Assault Squads, each						
Squad leader (NCO)	1	-	-	-	1	-
Rifleman	7	-	-	-	7	-
Total, each Squad	8	-	-	-	8	-
Rifle Squad						
Squad leader (NCO)	1	-	-	-	1	-
Rifleman	1	-	-	-	1	-
Light machine gunner	2	2	-	-	-	2
Assistant gunner	4	-	-	-	4	-
Total, Squad	8	2	-	-	6	2
Total, Platoon	33	3	-	5	25	3

Annex A - Communications and equipment

I should stress that I am not intimately acquainted with Second World War era German Army communication equipment so please see the Sources and Acknowledgements section for links to the relevant information.

Line equipment

The telephone equipment available to the German Infantry Battalion has already been discussed to a degree in the preceding sections, so this is more a recap.

The principle item of line equipment was the FF33 field telephone (*feldfernsprecher*), powered by its own local battery. Two such sets could be connected together for simple one to one communication, or multiple sets could be linked to the same switchboard. It was fitted with a crank handle that was spun to ring the telephone or switchboard on the other end of the line. Both light and heavy grades of field cable were provided, the latter giving much greater range.

The Communication Detachment had a single 10-line switchboard. This could be either the early OB17 model or the more straightforward 'small switchboard' developed in the interwar period. The OB17 had a telephone included for use by the operator, while its successors needed an FF33 to be connected to them. Another method of linking telephones was the *vermittlungs kästchen* (connection case), from two to ten of which could be assembled to create a modular switchboard.

During 1943 the naming and equipment of German Army line and telephone units was revised. Previously Telephone Troops had been graded as small, medium or large. Under the new system Telephone Troops were retitled Field Cable Troops, to which was appended a number, generally 3, 6, 10 or 12. The significance of the number was that it identified how many lengths of field cable the Troop was equipped with, and it would appear that heavy cable was the standard for all. Generally a length of field cable was supposed to be 1000m (1km), however the figure quoted in the description of the new units comes with a qualification; it appears that heavy field cable was delivered to units in lengths varying from 750m to 850m, so 3km would need perhaps four such lengths to complete.

Outline of Battalion telephone equipment, 1939 to 1942

Communication Detachment

- 1 switchboard, 10-line
- 4 connection cases
- 6 field telephones
- 8km, light field cable
- 2km, heavy field cable

Machine Gun Company (Headquarters)

6 connection cases

6 field telephones

12km, light field cable

8-cm Mortar Platoon (provisional estimate)

6 connection cases

6 field telephones

12km, light field cable

Outline of Battalion telephone equipment, 1943 to 1945**Communication Detachment**

1 switchboard, 10-line

10 field telephones

14 lengths, heavy field cable

Machine Gun or Heavy Company (Headquarters)

8 field telephones

12 lengths, heavy field cable

Also, added 1 switchboard, 10-line, in the Volks Grenadier Heavy Company (subunit allocation not given)

8-cm Mortar Platoon

2 parallel connectors

6 field telephones

3 lengths, heavy field cable

Note - line equipment for the 8-cm Mortar Platoon was seemingly deleted in the Volks Grenadier reorganization

12-cm Mortar Platoon

4 field telephones

6 lengths, heavy field cable

7.5-cm Infantry Gun Platoon (Volks Grenadier Battalion only)

2 field telephones

3 lengths, heavy field cable

Radio equipment

The mainstay of the Battalion Communication Detachment throughout the war was the *Tornister Funk* (backpack radio) *Torn.Fu d2* pack radio. This was normally operated by a two-man team, one carrying the set itself and the other the battery and associated accessories. The d2 (apparently nicknamed 'Hans' by the troops) could both send and receive in either voice or Morse (continuous wave).

At the lower end of the scale the German Army equivalent to something such as the British No.38 set or US SCR-536 came with the introduction of the *Feldfunksprecher* (field radiophone). The *Feldfu b* version could be worn as backpack equipment, with the operator having a throat microphone. Distribution of the *Feldfu* sets is only shown with KStN and KAN from the end of 1943 onwards, though it seems the series was in use before then.

Also shown with the Volks Grenadier Battalion Communication Detachment was a receiver only set (*Empfänger*) used for monitoring frequencies and with no sender.

Below is an outline of the issue of radio equipment in the German Grenadier and Volks Grenadier Battalion for 1944 and 1945.

Communication Detachment	4 Torn.Fu d2
	1 receiver only set (Volks Grenadier only)
Rifle Company (each)	4 Feld.Fu b (Company Headquarters)
	2 Feld.Fu b (8-cm Mortar Group on Dec43 KStN)
MG or Heavy Company	4 Feld.Fu b (Company Headquarters)
	3 Feld.Fu b (12-cm Mortar Platoon)
	6 Feld.Fu b (8-cm Mortar Platoon)
	2 Feld.Fu b (7.5-cm Gun Platoon, Volks only)

Below are some very basic notes on the performance of the two principle Battalion level radio sets. They are mostly derived from Allied intelligence summaries, which can be quite contradictory, particularly in terms of range.

Tornisterfunkgerät d2

Frequency range - 33.8 to 38.0 megacycles

Anticipated range - up to 3km (voice) or 10km (CW)

Feldfunksprecher b

Frequency range - 9.0 to 11.0 megacycles

Anticipated range - up to 1.5km

Annex B - Weapons and Ammunition

German KStN tables showed all the weapons allocated to units, though some degree of interpretation is still required when it comes to Platoons and Squads as this was not always detailed to individual level. Weapons were identified within certain categories and not as specific makes and models and small arms would be shown as;

Pistols (self-loading or other types)

Machine pistols

Rifles (which included bolt action and self-loading types and sniper versions)

Assault rifles (initially shown under machine pistols before getting their own heading)

Light machine guns

Heavy machine guns

Over the last few years some detail on ammunition issue has also become available so is included below; as ever please see the sources section for details.

i. Small arms

Pistols - the classic German sidearm was the Luger *Pistole 08* firing the 9-mm parabellum round (its name derived from the Latin, *Si vis pacem, para bellum* or 'if you desire peace prepare for war'). The Luger was one of the earliest semi-automatic pistols to be accepted for widespread military service in preference to the more reliable and easier to maintain revolver. It was fed from an eight-round capacity magazine, inserted into the pistol grip.

In the late 1930s a new pistol was introduced, the Walther P38. This likewise fired the 9-mm round and used an eight round magazine. It also benefited from a series of safety mechanisms largely absent from the Luger, including a double action trigger, a better internal safety and a chamber loaded indicator (though this latter feature was eventually deleted to contribute to speedier production).

It should be noted that the German Army was an extremely large user of pistols, and it readily absorbed captured stocks of foreign weapons to meet its needs, so weapons other than the home produced Luger and Walther could be found.

Machine pistols - in the pre-war era the German Army used several models of what it termed machine pistols (submachine guns). These included two Bergmann models, the MP18 that had been introduced in the closing stages of the Great War and its successor, the MP28. Both these fired the same 9-mm parabellum round as the Luger, the MP18 from a large snail drum and the revised MP28 from a more straightforward box magazine. In both cases the capacity was 32 rounds.

These were perfectly capable weapons, but they did not lend themselves to mass production, even though the MP18 had made some concessions in terms of build

quality by 1918 standards. What was required was a gun that could be churned out in the tens of thousands, and that duly appeared shortly before the war began.

The MP38 dispensed with the well finished look of the Bergmann models, using a combination of pre-fabricated metal stampings and plastic. It had a tubular stock that could be folded underneath the body to shorten overall length, which made it easier to use in armoured fighting vehicles. The MP40 quickly superseded the MP38, correcting a safety system flaw that could see the weapon fire when dropped. Both guns were otherwise the same, fed from a 32-round capacity straight magazine, pointing down vertically from the body. It had a cyclic rate of fire of approximately 500 rounds per minute and was standard 9-mm calibre

Two ammunition pouches were normally worn by personnel armed with the MP40, each holding three magazines for a total of six.

Rifles - the predominant rifle in the German Army throughout the war was the Mauser designed *Karabiner* 98K. This was based on the *Gewehr* 98 that had been introduced in 1898 and was adopted by a number of European nations.

The *Gewehr* 98 was, like many weapons of its day, a bolt action rifle. It was fed via a clip or charger holding a single stack of five rounds of 7.92-mm ammunition. To load the bolt was fully opened, the charger placed into guides and the ammunition pushed down into the internal magazine. The charger strip was removed and the bolt closed, leaving the rifle ready to fire. Production of the *Gewehr* 98 was simplified during its history, resulting in the *Karabiner* 98k, or Kar98. This was a shortened weapon designated *kurz* (short) that measured some 111cm long to the 125cm of the original *Gewehr* 98. Otherwise the two versions were identical to operate.

The German Army did have a long interest in semi-automatic or self-loading rifles but it took some time before anything appeared in service. The *Gewehr* 41 used the same 7.92-mm round as the Mauser rifles, but was fed from a 10-round magazine protruding out underneath the weapon. When the G41 was fired the gases created from the propellant worked the bolt via a piston and rod arrangement, thus ejecting the spent cartridge case with the rearward movement and stripping a fresh round from the magazine and chambering it on the forward return.

Though the G41 worked it had all the reliability issues of a new design being introduced part way through a war, particularly in terms of cleaning and maintenance. Conditions on the Eastern Front in particular were harsh on men and machinery, and it was here that the Germans encountered a Soviet take on the idea.

The earlier SVT-40 was in general not too dissimilar from the G41, in that it fired a standard rifle round and had a 10-round magazine. What was different was its much simpler operating system, which used gases tapped off from the firing of the round to operate a single piston to action the rearward movement of the bolt. While not without its own reliability issues it was a distinct improvement on the G41.

The mechanism of the SVT-40 was put into a German rifle resulting in the G43. Like the G41 it supplanted the G43 had a ten round capacity magazine and fired standard 7.92-mm ammunition. Many of the G43s produced were fitted with an optical sight (x4 power) for use as a sharpshooter or sniper rifle. Neither the G41 nor the superior G43 ever came close to replacing the Kar98 in overall usage.

Ammunition allocation for rifles does look to have undergone some modification after the outbreak of war. Pre-war there were two sets of ammunition scales for the Kar98, large (*gross*) and small (*klein*). Large sets look to have been 70 rounds per man, while the small set was just 20 rounds. The majority of the riflemen in Rifle Companies look to have been on the large set and all others on the small set. Certainly by 1941 numerous documents show an increase to 75 rounds per man for the large set while the small stayed at 20. This same figure is reflected in the few available KAN from the end of 1943 onwards into late 1944.

In terms of carrying ammunition, the rifleman's belt was fitted with six pouches, three on either side of the buckle each able to hold a pair of five round charger strips.

Assault rifles - the most important development in German rifle design came with a very different weapon, built around what was at the time a very different round of ammunition. Many armies had used a rifle and machine gun round in the 7.5-mm to 8-mm calibre range for some 50 years before 1939. These all used a large propellant charge which resulted in substantial recoil. At the time such rounds were adopted, in the latter years of the 19th century, it was believed infantrymen would need to deliver effective fire at ranges exceeding one mile, or nearly two kilometres.

Such rounds did not easily lend themselves for use in semi-automatic rifles, arguably only the US M1 rifle successfully managed the feat. The equivalent German and Soviet designs proved to be of only peripheral importance, offering relatively few advantages over the bolt action rifles they were intended to replace, and never being produced in sufficient quantities to supersede them entirely.

In 1943 a radical change was made. The standard German 7.92-mm round had a cartridge case some 57-mm long. This was shortened to 33-mm, which meant a reduction in the propellant charge it could hold, which in turn led to a reduced effective range. This new *kurz* round created much less recoil than the standard version and offered the possibility of a weapon that could deliver automatic as well as semi-automatic fire. While the range was shorter, it was still measured in the hundreds of metres, certainly beyond the general effective range of the 9-mm round.

The weapon developed to utilise this round was the MP43. This used a piston powered by tapping propellant gas off to force the rearward action of the bolt. It was fed from a large 30-round capacity, gently curving, magazine, loaded underneath the weapon that could interfere when firing prone. While sighted up to 800m the effective range is generally considered in the 500m to 600m bracket, which was well within the normal engagement range for most infantry encounters in Europe.

As well as single shot the MP43 could also be set to automatic, with a cyclic rate of fire of some 500 rounds per minute. This meant the same weapon could be used for both aimed ranged fire and in the close assault role, delivering rapid bursts. In effect it rolled the previously separate capabilities of the rifle and submachine gun into a single weapon, which would eventually become known as the assault rifle.

Issue of the MP43, which in turn became the MP44, and eventually the Stg44, was sketchy until late 1944. The first definite appearance in terms of KStN tables that I can find for the Infantry is with the short-lived *Sperr* Division, a precursor to the Volks Grenadier organization. However, the partial KAN table for the *Sperr* Rifle Company shows ammunition issue not for the MP44 as stated on the KStN but for 9-mm submachine guns. This continues into the first Volks Grenadier KStN and KAN tables, the former unhelpfully making no differentiation between MP40 and MP44/Stg44, simply having a single entry for machine pistols. This is corrected with the November 1944 KStN, but sadly there is no matching KAN available for this.

Ammunition was carried in the usual arrangement of two pouches each capable of holding three magazines.

Machine guns - I think it is reasonable to say that the principal weapon of the German Infantry arm was the machine gun.

In the early 1930s the *Reichswehr*, the limited army allowed Germany after the Great War, used the MG08/15. This was a weapon of the Maxim type consisting of the gun, a tripod and a water-cooling system that allowed for prolonged firing. The combined weight of these component parts came in at just under 60kg, to which burden was added the constant need for ammunition and water. Guns of this type required a large and dedicated crew and were not suited to Rifle Squad usage.

At the other end of the scale was the MG13, a weapon that proved to have a very short service history in the German Army. This used a 25-round capacity magazine, jutting out from the left-hand side, or a 75 round twin drum arrangement when in the anti-aircraft role. Together the MG13 and MG08/15 represented the normal combination of a light machine gun for use by Squads or Sections, with the heavy machine guns providing support at Company and Battalion level.

In the mid 1930s a new weapon appeared that combined the capabilities of light and heavy machine guns into a single model. This was the MG34, which would go on to influence post-war designs to a major extent. The basic MG34 weighed approximately 12kg when fitted with a bipod for use in the light machine gun role, making it several kilos heavier than most dedicated LMGs. To turn it into a heavy machine gun all that was required was a tripod mount, called the *Lafette* and weighing some 19kg, and a telescopic sight for ranging. The barrel could be quickly changed in either role so there was no need for a water-cooling system.

There was also another tripod, designed so the gun could be used in the anti-aircraft role. It would appear that this was issued on the basis of one per Rifle Platoon.

In both guises the MG34 was fed from a 50-round, non-disintegrating metal link belt that was to be reused multiple times. A single such belt could be contained in a drum attached to the left-hand of the weapon, or any number of belts could be joined together and fed through. This allowed the weapon to be used in the light role, with the belt contained in a drum to prevent it snagging, or for long periods of sustained fire as a heavy machine gun; loose belts could still be used in the light role.

The MG34 proved the concept of what was to become known as a general purpose machine gun. It was used as the machine gun armament for German tanks, halftracks and armoured cars as well as by the infantry arm. Even so it was not without its faults; like most weapons it was susceptible to environmental factors, such as dirt and dust, and required regular maintenance and cleaning. As with many pre-war designs it was neither quick nor cheap to produce.

Its planned successor was the MG42, which carried over the same facets of the MG34 in terms of it being multirole and fed by belt and drum. The MG42 was marginally lighter at 11.6kg and used a similar tripod to the MG34 for the heavy role. The principle difference between the MG34 and the MG42 was the rate of fire.

The MG34 had a cyclic rate of fire of between 800 and 900 rounds per minute, which was considerably higher than other machine guns of its day, which normally fell in the 500 to 600 rpm bracket. The reason for this difference was the German theory that when a machine gun opened fire it would only be a few seconds before the enemy took cover, therefore the more rounds that could be delivered in the shortest time, the greater the likelihood of inflicting casualties. In the MG42 this was even more pronounced with a cyclic rate of between 1100 and 1300 rounds per minute. This meant a 50 round belt could be expended in a shade less than 3 seconds.

This exceptional rate of fire has passed into the mythology of World War Two, but while a generation of general purpose machine guns appeared during the 1960s directly influenced by the MG34 and MG42, their varying cyclic rates of fire fell in the 850-950 rounds per minute range. The major exception was the MG3, which was in fact the MG42 put back into production for use by the post-war German armed forces, and retaining the same high rate of fire as the original.

Ammunition allowance for the MG34 in the light role was initially divided into 'large' and 'small' sets. The small set was for weapons issued to units such as the Regimental Infantry Gun and Anti-tank Gun Companies, where they were intended for purely defensive purposes, and was 1000 rounds per gun. The large set was used by the Rifle Squads and was 2500 rounds per gun.

The 1937 Rifle Company training manual shows the following items carried by each man of the LMG Troop of the Rifle Squad under KStN 131a or 131b.

- No.1 MG34, toolset, pistol
- No.2 2 ammunition cases, 1 spare barrel, pistol
- No.3 2 ammunition cases, rifle
- No.4 1 carrier for two belt drums, anti-aircraft tripod *or* 1 ammunition case

A revised manual was published sometime in 1940 that shows the Rifle Squad under the superseding KStN 131c with the allocations as below.

- No.1 MG34, toolset, pistol and 50 round belt drum, usually carried fixed
- No.2 4 belt drums (each 50 rounds), 1 ammunition case (300 rounds), 1 spare barrel, pistol
- No.3 2 ammunition cases (each 300 rounds), 1 spare barrel, pistol*

* (There is a difference here in that KStN 131c only allows for two pistols per Squad while the manual shows three per Squad. I would presume that the manual is in error in this instance. This is also the only manual description to show the rounds carried per drum and ammunition case.)

The final manual I have seen is from an uncertain point in 1943, presumably before *nA* came in as it still refers to the Rifle Squad of ten men.

- No.1 MG34, toolset, pistol and 50 round belt drum, usually carried fixed
- No.2 4 belt drums (1 loaded with armour-piercing rounds), 1 ammunition case (*or* 1 carrying bag with 4 further belt drums in place of the ammunition case), 1 spare barrel, pistol
- No.3 2 ammunition cases, 1 spare barrel, rifle

The 1937 Rifle Company manual gives the following for the MG34 detachment when it was used as a heavy machine gun at Company level.

NCO Optical sight, 1 ammunition case, 1 spare barrel, pistol

- No.1 MG34 (with bipod), toolset, pistol
- No.2 *Lafette* tripod, pistol
- No.3 2 ammunition cases, 1 spare barrel, rifle
- No.4 2 ammunition cases, 1 spare barrel, rifle
- No.5 tripod attachment, 1 ammunition case, 1 carrier for two belt drums, rifle

It was also noted that No.5 could replace the two belt drums with a second ammunition case. Though not stated the ammunition cases were presumably the 300 round capacity type shown in the 1940 Rifle Company manual.

ii. Mortars

5-cm light mortar - at the outset of the war the German Army used the 5-cm mortar to provide fire support at Rifle Platoon level.

It consisted of a short 46cm long barrel fitted directly to a somewhat complicated baseplate that held the elevation and traversing gear. The whole weighed in at approximately 14.5kg and each bomb 0.90kg. It was served by a three-man detachment of NCO and two mortar-men. Under the 1939-40 organizations their individual loads varied depending upon whether the mortar was carried disassembled or complete.

NCO 1 ammunition case, 3 aiming stakes, carrying frame, rifle

Weapon disassembled;

No.1 Sighting equipment, baseplate, 2 ammunition cases, carrying frame, pistol

No.2 Barrel, 2 ammunition cases, carrying frame, spares wallet, pistol

Weapon complete for combat;

No.1 Mortar (complete with sights), 1 ammunition case, carrying frame, pistol

No.2 3 ammunition cases, carrying frame, spares wallet, pistol

There is a slight variance in the details from the 1937 Rifle Company manual and those of the 1937 KStN, with the former showing pistols for the two mortar numbers and the latter rifles.

Ammunition was carried in steel cases, each holding ten complete rounds, giving a detachment a total of 50 rounds on the above scales. The 5-cm was trigger operated, so a round could be dropped down the barrel ahead of firing commencing. Angle of fire was restricted to between 45 and 90 degrees on flat ground. The crew would generally operate the weapon from the prone position. The usual round was high explosive, though evidently there was also a smoke round available; whether this was even included in the Platoon load and if so at what percentage I have seen no information on.

8-cm heavy (later medium) mortar - the 8-cm was originally classed as a heavy mortar, becoming medium with the introduction of the 12-cm weapon (described next). The 8-cm mortar was a conventional example of its type, with each of its three component pieces (barrel, baseplate and bipod) weighing around 18.5kg. Maximum range is generally quoted as 2400m, though certain Western Allied estimates quote much less than this, presumably due to incomplete intelligence.

Regrettably I have not been able to find something akin to a training manual for the 8-cm mortar detachment so the below is a little scant and in part gleaned from various pieces dotted around the internet.

In the normal Infantry Battalion the 8-cm Mortar Platoon was reliant on horse-drawn transport. The Jf.9 infantry cart (which could also be abbreviated as If.9) was introduced in the immediate pre-war years and carried the 8-cm mortar disassembled along with ammunition and associated equipment. It was pulled by a single draught horse, the driver walking in front. This was superseded by the Jf.8 infantry cart, which resembled a small single axle trailer. Two were normally paired up and pulled in train by a single horse. For each pair of mortars there was also a light field wagon (Hf.1), drawn by two draught horses with a seated driver.

There are a few examples of training diagrams posted online from various manuals, including one found at the below link. From these the Mortar troop in its seven man form appears to have had the following equipment.

<http://www.fjr5.es/foro/index.php?topic=778.0>

NCO	1 ammunition case, aiming stakes, harness, pistol
Leader	Sighting equipment, 1 ammunition case, baseplate, harness, pistol
No.1	Bipod, harness, pistol
No.2	Barrel, harness, spares wallet, pistol
Nos.3-5	each 1 ammunition case and rifle

A photograph from a manual looking to be dated to early 1940 however shows only Nos.3 to 5 with ammunition cases, each carrying two, and no harness for the man with the barrel. This harness was worn like a backpack and could fit either the baseplate or the bipod, while the barrel was seemingly worn slung. In the first example the troop would have five ammunition cases to hand (15 bombs) while the second offers six (18 bombs).

12-cm (heavy) mortar - despite the often glowing reputation of home produced weapons the German Army was a major user of foreign equipment. One such example was the Red Army's HM-38 120-mm mortar, which German industry began producing in 1943.

The 12-cm mortar was effectively a small artillery piece, weighing 420kg complete. There was no likelihood of this weapon being broken down and man-packed as with the 8-cm. The 12-cm was transported towed, carried on its own wheeled frame, from which it had to be removed before firing. The preferred towing vehicle was the *Raupenschlepper Ost*, a fully tracked vehicle with a 1.5-ton loading capacity.

iii. Infantry anti-tank weapons

There is a problem in covering anti-tank weapons while remaining within the context of the German Infantry Battalion, in that there were only two dedicated anti-tank weapons that were part of the Rifle Company (excluding grenades, which are covered subsequently).

The first of these was the *Panzerbuchse* 39 anti-tank rifle described earlier. While appearing on the KStN for the Rifle Company from late 1939 it seems very few of these weapons were actually in service before early 1941. It fired a 7.92-mm armour piercing round from a 12.7-mm case and was loaded by pushing the pistol grip forward then down, thus allowing a single round to be inserted into the chamber, before returning the grip to its original position. Once fired the empty cartridge case was ejected when moving the pistol grip forward again. The US Army description of the *Panzerbusche* shows it with two ammunition carriers, each holding ten rounds, fitted on either side of the stock near the pistol grip.

As with most anti-tank rifles it was quickly left behind as newer tanks had a far greater thickness of armour than was found on their pre-war precedents. The German Army made an attempt to keep the *Panzerbusche* in service by turning it into a rifle grenade launcher. This modification required the barrel to be cut down and a discharger cup fitted.

The other infantry anti-tank weapon would cause numerous casualties to Allied tank crews on both the Eastern and Western Fronts. By 1943 the hollow charge principle was being used in a number of infantry anti-tank weapons, which allowed a physically lightweight launcher to deliver a destructive anti-armour warhead. There were two such weapons in German usage, the crew-served *Raketenpanzerbusche* (RPzB54), similar in appearance to the US 'Bazooka' and the one-man, one-shot *Faustpatrone*, which developed into the *Panzerfaust* series.

The RPzB54, also known as the '*Panzerschreck*' or 'tank terror' was issued to the Infantry Regimental Anti-tank Company under the Type44 reorganization. It was aimed to displace the towed 5-cm Pak38 anti-tank gun, with the Company having two Platoons each with 18 launchers and one Platoon with three towed 7.5-cm Pak40 guns. Under the Volks Grenadier format the Regimental Anti-tank Company was entirely equipped with the *Panzerschreck*, becoming three Platoons of 18 launchers each, with another 18 as a reserve.

In both types of Company the Platoon structure was the same, consisting of a small Headquarters including a two-man team with a light machine gun. There were then three Sections, each of an NCO and six teams, each team with a gunner, assistant and one launcher. While a Platoon of these weapons could easily be attached to each Grenadier Battalion, they were not officially part of them and so are not included in this study.

The *Panzerfaust* was different though from the *Panzerschreck*. In its original form, the *klein* (small) *faustpatrone*, it had a range of around 30m (about 100 foot), making it useful for only very close encounters with enemy armour. The *klein* weighed just 3kg and was a little over 1m long, three quarters of which was the disposable launch tube. Unlike the *Panzerschreck* or Bazooka the *faustpatrone* used a conventional gunpowder propellant that produced a visible signature and required a good 2m clearance behind the firer for the gases to vent. The short range also meant the operator was at risk from shell splinters, who was advised to take cover immediately after firing. It could be used by a man standing, kneeling or prone.

Armour penetration of the original *klein* was reckoned at about 140mm from a warhead of 100mm diameter. The next version, which is perhaps when the name change to the *Panzerfaust* occurred, increased the warhead calibre to 150mm and the weight to 5kg though range remained at 30m. The third variant was effective to 60m and weighed 6kg, while the final version had a 100m range and came in at 6.8kg. These models were known as the *Panzerfaust* 30, 60 and 100 respectively, in line with their range. All three had an expected armour penetration of 200mm, making them extremely effective against the majority of Allied tanks.

Issue of the *Panzerfaust* was along the lines of 36 per Rifle Company as shown on the available late war KAN.

iv. Hand grenades, rifle grenades and signal pistols

Hand grenades - the archetypal image of the German hand grenade is the 'stick grenade' (*Stielhandgranate*), consisting of a hollow wooden shaft on the top of which was a thin metal case (resembling a squat tin or can) that contained the explosive charge. At the other end of the wooden shaft was a metal disc that when removed allowed a weighted cord to drop. Once pulled the inserted fuse was activated, giving the holder 4-5 seconds to throw the grenade before detonation. There was also a smoke variant of the stick grenade.

The metal casing was thin walled, the effect being largely from concussion rather than fragmentation, intended to allow assaulting troops to follow up quickly without needing to take cover. The standard box held 15 grenades and detonators, which were fitted before combat by removing the metal casing. It was possible to assemble a larger device by securing six removed casings around a seventh, complete grenade, to create a more powerful explosion.

Also used was the small 'egg grenade' (*Eihandgranate*), similar in size and appearance to British and US hand grenades, but absent the serrated casing. Like the stick grenade it relied on blast effect rather than fragmentation. It was fitted with a top mounted igniter, which had first to be unscrewed before being pulled out, arming a fuse of 4-5 seconds. It was issued in boxes of 30.

Anti-tank grenades - the *Haft-Hohlladung* was another hollow charge weapon that predated the *Panzerfaust*. It was mounted on a six-sided plate, beneath which were a trio of evenly spaced magnets. Atop this base was a circular housing that tapered up into a straight handle, looking rather like an upturned funnel. The magnets were to fix the grenade against the armour of a target vehicle; this of course required the operator to get within arm's reach beforehand. The fuse was located in the handle and looks to have been similar to that of the egg grenade in terms of operation (turn and pull). The fuse was from 4 to 7 seconds.

The first model weighed 3kg, and was superseded by a redesigned model (best described as looking like a hand bell) that came in at 3.5kg. Armour penetration is generally quoted as 140mm of armour.

Two types of rifle grenade launcher were found, one a spigot, which the tailpipe of the grenade slid over, the other a cup, into which the grenade was loaded with a twisting action. It appears only one round was developed for use with the spigot type launcher, an anti-tank grenade with a distinctive flat looking surface that was actually concaved in. Effective range is referred to in Allied sources as approximately 90m and armour penetration up to 35-mm.

Alongside this was the cup discharger, for which there were a variety of grenade types made. These included high explosive, anti-tank, smoke, blinding, flare and even one designed to deliver propaganda leaflets. Quoted range for the HE model is generally up to 250 metres (though 500 metres is given in some sources). It was also fitted with a cord that could be pulled allowing it to be armed then thrown as a normal hand grenade.

In the anti-tank role there were perhaps four principle types used with the cup discharger, approximate performance figures for which are given below. It should be noted there is some variation in Allied assessments of these weapons.

Model	Range	Armour penetration
<i>gewehr panzergranate</i>	50m	20-mm
<i>gross gewehr panzergranate</i>	90m	30-mm
<i>gross gewehr panzergranate 46-mm</i>	200m	90-mm
<i>gross gewehr panzergranate 61-mm</i>	200m	120-mm

Both types of rifle grenade discharger required a blank round to be fired from the user's rifle to launch the grenade.

Signal pistols - the 27-mm *leuchtpistole* was the normal flare pistol. It fired flares, rounds that produced a whistling sound, red or green star shells, and smoke indicating rounds (violet or orange). As might be expected the pistol was modified to fire ammunition proper. This was the *kampfpistole* and rounds provided were HE (including a variant of the egg grenade) and hollow charge.

v. Ammunition packaging and allocations

Small arms - the German system of packaging small arms ammunition was unchanged during the war and was covered in several Allied guides. In general terms the smallest container was a carton, holding from 14 to 20 rounds. These were then packed in carriers, which could hold varying amounts and combinations, with generally five carriers of the same type per box. Outline figures are below;

Round	Rounds per carton	Rounds per carrier	Per box (5 carriers)	Notes
9-mm	16	832	4160	Pistol & MP
7.92-mm (rifle)	15	300	1500	5 round strip
7.92-mm (MG)	15	300	1500	Loose
7.92-mm (kurz)	15	30	2250	Stg44
7.92-mm Atk	5	n/a	250	50 cartons

Late war British notes identify different packaging options for the 7.92-mm *kurz* round, based on 14 rounds per carton (total 2100 per box) or 20 rounds per carton (total 2200 per box). It also notes that the carriers were to be eliminated for these rounds in due course.

The standard 7.92-mm x 57-mm round was produced in multiple types, including;

Ball - *Patronen schweres Spitzgeschoss (patr.sS)*

Armour piercing (steel core) - *Patronen Spitzgeschoss mit Stahlkern (patr.SmK)*

Armour piercing (steel core) (with tracer) - *Patronen Spitzgeschoss mit Stahlkern und Leuchtspur (patr.SmK L'Spur)*

Armour piercing (tungsten carbide core) - *Patronen Spitzgeschoss mit Stahlkern gerhartet (patr.SmK (H)).*

Ammunition allocation

There is some detail available on the expected allocation of small arms ammunition, mortar bombs and grenades to units, mostly given as total per weapon type per Division, meaning some calculation is required to arrive at certain figures.

Allied to the KStN table, which detailed personnel, transport and weapons, was the *Kriegsausrustungsnachweisung* table. This was analogous to the British AFG.1098 table and likewise included detail on types and amounts of ammunition for units. There are seemingly very few of these remaining (though compared to the AFG.1098 they are positively plentiful). By the end of 1944 ammunition information appears to have been transferred to a publication entitled *Zahlenangaben fur den Munitionsnachschub, Stand vom 1.5.44.*

Ammunition load, German Infantry Regiment 'b' (dated January 1939)

Weapon	Total weapons	On man or combat vehicles	Total per gun	On Light Column	In Divisional Column	Total
Pistol	878	7024	8	1680	1756	10,460
Rifle; large set - a	1173	90,560	60	28,500	16,775	728,835
Rifle; small set - b	1009		20			
LMG; large set - c	81	406,000	2500	114,000	73,000	
LMG; small set - d	4		1000			
HMG; large set - e	42		4750			
5-cm mortar	27	2430	90	1215	810	
8-cm mortar	18	1728	96	432	360	2520
7.5-cm infantry gun	6	720	120	240	120	1080
15-cm infantry gun	2	80	40	40	40	160
3.7-cm Pak	12	2160	180	-	480	2640
Hand grenade - f	n/a	945 (1060)	n/a	1095 (1095)	935 (1050)	2735 (3205)

Above predates the introduction of machine pistol and anti-tank rifle to Regiments

Notes

- a. Large set for each man armed with rifle in each Rifle Company (except for the 17 men in Company Trains, who had the Small set issue).
- b. Small set for each other man armed with rifle in the Regiment.
- c. Large LMG set for each LMG in a Rifle Squad.
- d. Small LMG set for each LMG in Regimental Anti-tank Company.
- e. Large set for each HMG in Battalion.
- f. There is a problem with the figure for grenades in the original document, in that the totals for the Infantry Regiment just do not add up. The figures in brackets in the final line of the above are therefore my calculations as to what fits the overall total.

While not stated it is possible to calculate a figure for the ratio of ball/AP/tracer for the light and heavy machine guns. These are my own figures based on the overall totals for the Division and a standard load for each MG set;

LMG large set - 2100 ball + 250 AP + 150 tracer
 LMG small set - 500 ball + 450 AP + 50 tracer
 HMG large set - 3995 ball + 528 AP + 227 tracer

**Ammunition allowances, from various *Kriegsausrüstungsnachweisung*
(all dated between December 1943 and September 1944)**

Weapon	Rounds
Pistol; small set	16
Machine pistol; small set	512
Rifle; large set - a	75
Rifle; small set - b	20
Rifle, self-loading	120
Rifle; assault (Stg44)	540 (<i>assumed from other sources</i>)
LMG; large set - c	(2500) as; 2100 ball 300 AP 100 AP tracer
LMG; small set - d	(1005) as; 510 ball 375 AP 120 AP tracer
HMG; large set	(4750) as; 3950 ball 450 AP 350 AP tracer
8-cm mortar	(132) as; 123 HE 9 smoke <i>from September 1944</i> 120 HE 9 smoke 3 indicator
12-cm mortar	90 HE
7.5-cm infantry gun	(144) as; 120 HE 24 hollow charged
15-cm infantry gun	50 HE 7 hollow charged
Rifle grenades	(140) then (90) as; 60 HE (<i>reduced to 30 for Volks Grenadier</i>) 40 AP (<i>reduced to 20 for Volks Grenadier</i>) 20 blind 20 smoke
<i>Panzerschreck</i>	20
5-cm Pak anti-tank gun	(176) as; 152 AP 24 HE
7.5-cm Pak anti-tank gun	(100) as; 66 AP 34 HE

Notes

a. Large set for each man armed with rifle in the following;

Regimental Staff Company

Supply Platoon of Volks Grenadier Battalion

Rifle Company (all types) (*excepting 10 rifles in the Heavy MG Group of May 1944*)

Regimental Anti-tank Company (Headquarters and all types of Anti-tank Platoon)

b. Small set for each man armed with rifle in the following;

Regimental Headquarters

Battalion Headquarters (KStN 111n)

Volks Grenadier Battalion Headquarters (less Supply Platoon)

10 rifles in the Heavy MG Group of May 1944 Rifle Company

MG Company

Heavy Company

Infantry Gun Company

Volks Grenadier Infantry Gun (later Heavy) Company

c. Large LMG set for each LMG in the following;

Rifle Squad

Rifle Platoon (*excepting in 131n of Dec 1943 and May 1944, both with nil allowance*)

Company Trains of Rifle, MG and Heavy Companies

Volks Grenadier Battalion Headquarters

Regimental Staff Company

Volks Grenadier Infantry Gun (later Heavy) Company

Regimental Anti-tank Company (Headquarters and all types of Anti-tank Platoon)

d. Small LMG set for each LMG in the following;

Battalion Headquarters (on KStN 111n)

Infantry Gun Company

Hand grenades and Panzerfaust (1943-1944 KAN issues)

Detail	Stick grenade	Egg grenade	Panzerfaust*
<i>KAN for Grenadier Battalion re KStN tables dated 1st December 1943</i>			
Battalion HQ	15	30	6
Rifle Company	90	120	36
MG Company	0	120	21
<i>KAN for Grenadier Battalion re KStN tables dated 1st May 1944</i>			
Rifle Company	90	120	36
Heavy Company	60	120	21
<i>KAN for Volks Grenadier Battalion re KStN tables dated 1st September 1944</i>			
Battalion HQ	30	-	-
Rifle Company	90	120	36
Heavy Company	45	90	18

*Panzerfaust may be replaced by *Haft-Hohlladung* on same scales

Annex C - Notes on the use of the Volks Grenadier Battalions

In September 1944 a brief, five-page leaflet was produced titled *Hinweise für die Führung des Grenadier-Regiments einer Volks-Grenadier-Division*, which roughly translates as 'Hints for the deployment of the Grenadier Regiments of a Volks Grenadier Division', a short excerpt of which was sent to me many years ago.

Keeping with the theme of rough translation, below is my attempt at translating the sections of the document that focus on the use of the Regiment's weapons into an English language version (or at least a close approximation). Words bracketed in *italics> are my additions to add clarification to a few points.*

Hints for the deployment of the Grenadier Regiments of a Volks Grenadier Division

The main differences between the Grenadier Regiment of the Volks Grenadier Division and the Grenadier Regiment of the Infantry Division 44 are;

Integration of two MP Platoons into each Grenadier Company (MP44).

New organization of the infantry heavy weapons.

- a. The Heavy Company of the (*Volks*) Grenadier Battalions (summarised as two Heavy Machine Gun Platoons, one Platoon of four IG37 infantry guns and one Platoon of six medium mortars).
- b. The 13th Company of the Grenadier Regiment (which includes two Platoons each of four 12-cm mortars and one Platoon of four IG37 infantry guns).

Loss of the Infantry Anti-tank Company, which is replaced by the Tank Destroyer Company.

Centralised supply for the Battalions by the Supply Platoon. This replaces the Trains of the Companies. Regimental Companies are supplied as before and keep the Trains.

The Materiel and Personnel situation cause these changes. When leading these Regiments these characteristics must be taken into account.

1. Grenadier Company.

The fire and shock effect has been significantly increased. This was achieved by:

- a. Incorporating two MP (Shock Platoons). These Platoons are, due to the high firepower and immediacy of their weapons, particularly suitable for 'shock troop like' warfare in the attack and in the defence (against breakthroughs and counterattack).

Their use in the defence is on focussed points, especially in such terrain where longer ranged weapons (light and heavy machine guns, mortars and infantry guns) cannot be used to full effect. The MP44 has about the same accuracy as the rifle up

to about 400m. The value of this fully automatic weapon lies in its high rate of fire and single shot accuracy (22 to 28 rounds per minute), as well as the possibility of firing in burst of 2 to 3 rounds. In general, single shot fire is delivered. Shock fire (*fully automatic*) is to be used only in close combat (breakthrough, counterattack, night fighting). Fire discipline must be enforced as the short cartridge cannot be replaced by the normal rifle and machine gun ammunition. For further information see leaflet 25 a/16.

The MP Platoons have been left two light machine guns as reserve equipment, which are to be used, among other things, to enhance defensive firepower and for defence against aircraft.

- b. The Sharpshooters (in three pairs) are combined with Company Headquarters.
- c. The rifle grenadiers of the Platoon are combined. By taking advantage of the increased range the Platoon commander can better supplement the fire of the MP44 and light machine guns in attack and defence.

2. New organization of infantry heavy weapons.

All the infantry heavy weapons, including heavy machine guns, medium mortars and light infantry guns, are integrated into the Heavy Company of the Grenadier Battalion. The heavy mortars along with another Light Infantry Gun Platoon are concentrated in the 13th Company of the Regiment. Later its Light Infantry Guns will be replaced by a Heavy Infantry Gun Platoon.

a. Heavy Company of the (Volks) Grenadier Battalion.

In here are concentrated all the infantry heavy weapons of the Grenadier Battalion. This allows for unified training and the Battalion commander can better lead the Battalion firefight. The rapid building of fire superiority in both attack and defence is facilitated.

By using the two Heavy MG Platoons - if possible from concealed positions - the fire of the light machine guns of the Grenadier Companies is supplemented.

The 8-cm mortars are used as a Platoon. Only where defensive frontages are too large might the use of Mortar Groups (*two weapons*) become necessary, while the Light Infantry Guns remain as a Platoon under the control of the Battalion commander. The combination of the Light Infantry Guns and the Mortars under the fire control of the chief of the Heavy Company strengthens the effect to a high degree, and is always to be aimed for in both attack and defence.

The main task of the IG37 of the Grenadier Battalion Heavy Company is the destruction of enemy heavy weapons and resistance nests (*fortified positions*). In the defence they also attack enemy concentrations with combined fire and participate in barrages.

Accordingly, and depending upon the combat mission, terrain and the ability to deliver overhead fire, fire missions will be undertaken from covered positions in the rear of the battlefield. Keep close contact with the Companies fighting in the Front!

If enemy tanks attack the Light Infantry Guns will fight them. Effective hits can be obtained at up to 400m. Due to the insufficient penetration one should mainly target the sides and tracks. Accordingly, alternative firing positions should be found in close proximity to the covered positions, and prepared in such a way that effective anti-tank defence within the Regimental plan and using flanking positions can be achieved as far as possible.

b. 13th Company of the Regiment.

In here are found the Regimental commander's eight 12-cm mortars, organized in two Platoons of four tubes each, and one Light Infantry Gun Platoon of four IG37 guns, which enable him to concentrate fire on focal points through the direction of the Company Chief. The Company will usually be used as a single unit. The use of individual Platoons will be an exception.

c. 14th (Tank Destroyer) Company of the Regiment.

The unit is purely equipped with the *Panzerschreck* (three Platoons, each of 18, plus 18 reserve weapons). The Regimental commander is thus able to form a staggered defence against tank attack in both attack and defence, complemented by the other Companies (using *Panzerfaust* and tank destruction materiel).

The usual units of the Tank Destroyer Company are generally Platoons and Groups. The use of Troops (three *Panzerschrecks*) is limited to exceptions. For the development of a defensive strongpoint against armour, as far as the personnel situation permits, the reserve equipment can be used.

Sources used and Acknowledgements

This is one subject where I am going to struggle to credit all the relevant sources. I've been dipping into the subject of German KStN tables and organization for a good 20 years now, so keeping track of every source and contribution becomes difficult.

There are though some people who deserve a credit, as without their knowledge, generosity and patience I would never have gotten near a KStN in the first place, namely Piet Duits and Leo Niehortser, and for plugging multiple gaps in my collection, Richard Hedrick.

Also to Jeff Leach who has made available a truly vast amount of data held in the US by NARA, all for free. There are also people who have sent me 'bits and bobs' of info over the years that I have lost the credit for, so thanks to all who have done so.

Please see below for website links as appropriate for the above.

***Kriegsstärkenachweisung* tables**

Staff of an Infantry Battalion (ref 111), issue dates of;

111(R) - 1st October 1937
 111 - 1st February 1942
 111n - 1st December 1943
 111V - 1st September 1944

Rifle Company (ref 131), issue dates of;

131a (R) - 1st October 1937
 131b (R) - 1st October 1937
 131c - 10th October 1939
 131c - 1st February 1941
 131n - 1st October 1943
 131n - 1st December 1943
 131n - 1st May 1944
 131V - 1st September 1944
 131V - 1st November 1944

Machine Gun Company (ref 151), later Heavy Company (ref 151), issue dates of;

151a - 1st October 1937
 151b - 1st October 1937
 151c - 10th October 1939
 151c - 1st February 1941
 151n - 1st December 1943
 151n - 1st May 1944
 151V - 1st September 1944

***Kriegsaurüstungsnachweisung* tables**

Staff of an Infantry Battalion (ref 111), issue dates of;

111n - 1st December 1943

111V - 1st September 1944

Rifle Company (ref 131), issue dates of;

149n - 1st December 1943*

149n - 1st May 1944

131V - 1st September 1944

151n - 1st December 1943*

151n - 1st May 1944

151V - 1st September 1944

*denotes supplied by Piet Duits. The KAN for 131n does not appear to have survived; 149n is for the Bicycle Rifle Company found in the Fusilier Battalion of the nA and Type44 Infantry Division, and offers the best available substitute.

German Training publications, The Rifle Company (editions dated 1939, 1940 and 1943)

For 1939 search for Military Intelligence Service Information Bulletin No.15 (available as a free or purchased PDF from several sources)

For 1940 see www.naval-military-press.com

For 1943 see www.mlrsbooks.co.uk

Not a contemporary manual but also see the German Infantry Handbook (by Alex Buchner) - ISBN: 9780887402845

Communications equipment

<https://kriegsfunker.com/books.php>

Thanks to 'funksammler' over at Axis History forum for his replies to my queries on German line equipment. The above link includes a direct download for what I assume to be his PDF work on the subject.

US Army manual TME-11-227 (available from numerous sources as a PDF)

Allied Intelligence publications

(US) Tactical and Technical Trends (particularly No.37 of 4th November 1943)*

(US) Company Officer's Handbook of the German Army 31st March 1944**

(US) German Infantry Weapons 25th May 1943*

(US) The German Squad in combat 25th January 1943*

(US) Handbook on German Military Forces (ref TM-E 30-451) 1st September 1943 and 15th March 1945*

(UK) Enemy Weapons (Part V) July 1943

(UK) Handbook of Enemy ammunition, pamphlets No.11 (May 1944), No.13 (October 1944) and No.15 (May 1945)

*indicates available from - <http://cgsc.contentdm.oclc.org/cdm/>

**indicates available from - <https://usacac.army.mil/organizations/cace/carl/wwispec>

(note the second link ALWAYS triggers a site certificate warning).

Website links

Dr Leo Niehorster's site - <http://niehorster.org/>

Richard Hedrick's website - <http://www.sturmpanzer.com/Default.aspx>

Thread on the Axis History Forum listing downloads made available by Jeff Leach

<https://forum.axishistory.com/viewtopic.php?f=48&t=223939>

Note that you do not have to be a forum member there to access the files.

The German documents in Russia Project site

<http://germandocsinrussia.org/de/nodes/1-russisch-deutsches-projekt-zur-digitalisierung-deutscher-dokumente-in-den-archiven-der-russischen-f-deration>

Note that this site has been reconstructed several times and lots of links from various forums are now dead as a result. I scoured it mercilessly for KStN, KAN and associated data and am now hard pressed to find the files I took the information from. Also some items have been pulled down (ostensibly to undergo watermarking that was absent when the site first went live) and not put back up.

Two groupings of documents are of particular relevance for organizational info -

<http://wwii.germandocsinrussia.org/de/nodes/824-findbuch-12451-oberkommando-des-heeres-okh>

<http://wwii.germandocsinrussia.org/de/nodes/2138-findbuch-12450-oberkommando-der-wehrmacht-okw>