

2) German Army Infantry Units

a. Infantry Division Waves (*Welle*)

From 1939 to 1945, Germany infantry was called up in thirty five waves (*welle*). Each wave had a different equipment allocation and subsequent organisation. Some waves had only slight differences compared to the 1st wave, but other waves were designed for rear-area security and occupation duties. The latter divisions had considerably less equipment and training, and fewer personnel compared to the so called 1st and 2nd line 'combat capable' divisions. The Germans generally classified their divisions as category 1, 2 or 3. 'Category 1' divisions were capable of offensive or defensive operations on any front line. 'Category 2' divisions were capable of limited offensive operations and normal defensive operations on the front line. 'Category 3' divisions were capable of defensive operations only and were generally reserved for garrisoning and occupation duties.

To confuse enemy intelligence (and post-war WWII scholars) and disguise the true number of divisions fielded, the Germans varied the sequence of divisional numbers issued. Therefore although the 1st Division might have been the senior division of a certain type, the 250th Division was not necessarily the 250th division of that type raised.

When Germany began making preparations for war she called up the infantry in six waves. The first wave of 35 infantry divisions was the standing army. The remaining five waves, mobilised in 1939, were drawn from various sources including reserves, new draughts and the *Landwehr* (older soldiers, some of whom participated in WWI, which made up the militia of the German Army). The 6th wave of four divisions was interesting in that its equipment was mostly of Czechoslovakian origin.

In early 1940, as the planned invasion of France approached, the Germans began to expand their infantry forces further. The 7th, 8th and 9th wave divisions were mobilised prior to the invasion of France, although the thirteen 9th wave divisions did not last long and were disbanded in August 1940.¹ The nine 10th wave divisions were formed from new drafts in May 1940 but the campaign ended before they could be mobilised. Because the Germans didn't see much problem occupying France and saw little prospect of serious land based opposition from Britain, the partially formed 10th wave divisions were disbanded. This was a remarkable decision when one considers that Hitler is known to have been already making plans for the invasion of the USSR; a country with the largest army in the world as early as 1940. On 21st July 1940 the 11th wave divisions were ordered to be formed. These were followed by the 12th wave divisions in August 1940, the 13th wave in October 1940, the 14th wave in November 1940, and the 15th wave in April 1941 (see respective subsections below for more detail).

By June 1941 some of the infantry divisions called up in 1939-40 had been reorganised, re-equipped and redesignated as new motorised or panzer divisions. For example, the 4th Infantry Division was a 1st wave infantry division mobilised on 24th August 1939 as part of the standing army. After participating in several early war campaigns, the division was redesignated the 14th Panzer Division on 15th August 1940 and was soon reorganised and re-equipped as such. In the process the 4th Infantry Division was deleted from the German order of battle and the 14th Panzer Division was added.

By 22nd June 1941 there were still 156 designated infantry divisions in the German army which had been called up in 13 waves (including four light infantry divisions and excluding the SS Police (*Polizei*) Division).² The situation on this date is shown in table [Inf Div Waves](#), which shows the German infantry division *welle* (waves) as deployed across the Reich on 22nd June 1941. From this table we can see that 94 infantry divisions were deployed in support of Operation Barbarossa from 22nd June to 4th July 1941. In addition we can see that all 6th, 13th, 14th and 15th wave infantry divisions, and the large majority of 3rd and 5th wave infantry divisions, were deployed in quieter areas. Except for the 5th wave divisions, these were all 'category 2' divisions capable of limited offensive operations and normal defensive operations on the front line, or 'category 3' divisions only suitable for rear-area security or occupation duties.

¹ Four so called *Oberrhein* divisions were also formed after the 8th wave in February 1940. These were designed to garrison the upper Rhine valley. The 9th wave was formed on 10th March 1940 by absorbing the *Landeschutzen* divisions into the regular army. The 9th wave included the 100th, 200th, 300th and 400th *Ersatz* (training) divisions on 1st June 1940. All the *Oberrhein* divisions and all the 9th wave divisions were disbanded on 1st August 1940, or used to form *Landeschutzen* regiments.

² In June 1941 the SS 'Polizei Division' was organised along the lines of a 1st wave infantry division. The SS Police Division was raised by the police using former armed police personnel, but was subordinate to the SS. It used army personnel for its supply and support infrastructure.

Table Inf Div/Waves
German Infantry Division Welle (Waves), as Deployed on 22nd June 1941

1st Wave	2nd Wave	3rd Wave	4th Wave	5th Wave	6th Wave	7th Wave	8th Wave	11th Wave	12th Wave	12th Wave light	13th Wave	14th Wave	15th Wave
52	205^	251	251	93^	81^	161	290	121	102	97	302^	332^	702*
56	206	252	252	94^	82^	162	291	122	106	99	304^	333^	704**
57	208^	253	253	95	83^	163	292	123	110	100	305^	335^	707
58	211^	254	254	96^	88^	164**	293	125	111	101	306^	336^	708^
61	212^	255	255	98^		167	294**	126	112		319^	337^	709^
62	214*	256	256			168	295	129	113		320^	339^	710*
68	215^	257	257			169	296	131			321^	340^	711^
69*	216^	258	258			170	297	132			323^	342^	712^
71	217	260^	260^			181*	298	134			327^		713
73**	218	262	262			183**	299	137					714**
75	223^	263	263			196*							715^
76	225^	267	267			197							716^
78	227^	268	268			198							717**
79	239	269	269			199*							718**
86		246^	246^										719^
87													
30													
31													
32													
34													
35													
44													
45													
46**													
50													
72													

Originally mobilised 1939	Originally mobilised 1940	1941
Army Group North	East Front 22nd June to 4th July 1941	
Army Group Centre		
Army Group South	90 Infantry Divisions and 4 Light Infantry Divisions	
Norway Army, Befehlsstelle Finnland (East Front Only)		
OKH Reserves		
Norway Army (Norway Occupation Duties)	Non-East Front Forces	** Air Landing Division
Army Group D (Oberbefehlshaber West)	62 Infantry Divisions	
12th Army (Yugoslavia-Serbia-Greece-Crete)		
Replacement Army		

b. 1st Wave Infantry Divisions

When Germany launched operation *Fall Weiss* (Plan White – the invasion of Poland) on 1st September 1939, the new German Army had been almost totally rebuilt from scratch. At the end of WWI the army had been limited to 100 000 men with only seven infantry divisions, but these were the cream of the crop and formed an elite cadre from which to start rebuilding: every NCO had the capability of becoming an officer and most eventually did. These men carried with them the hard-won lessons of The Great War, and this is very apparent in the German Army's rebuilt infantry divisions. In early 1918, in preparation for the last great German offensive of the war, the Germans had redesigned and reorganised their 'assault' infantry divisions. These now comprised:

- 3 Infantry Regiments, each with
 - 3 Battalions, each with
 - 4 Rifle Companies and 1 Machine Gun Company
- 1 Cavalry Squadron
- 1 Pionier (Combat Engineer) Battalion, with
 - 2 Pionier Companies, 1 Mortar Company and (sometimes) 1 Searchlight Section
- 1 Artillery Command (Arko), with
 - 1 Heavy Artillery Battalion and 1 Artillery Regiment (with 3 artillery battalions)
- 1 Feldersatz (Replacement) Battalion
- 1 Signals Command, with
 - 1 Telephone Section and 1 Wireless Section
- Divisional Support Units, with
 - 2 Field Hospitals, 1 Medical Company, 1 Ambulance Company, 1 Veterinary Company
 - 1 Motor Transport Detachment, 1 Field Bakery, 1 Munitions Column and
 - 1 Training Detachment

By early 1939 the German Army had expanded from the seven infantry divisions granted by the Versailles Peace Treaty to 35 infantry divisions, and these active peace time formations were designated 1st Wave (*Welle*) Infantry Divisions. Upon mobilisation in August 1939, these 35 'active' infantry divisions formed the Army's 1st line (category 1) infantry divisions. The September 1939 German infantry division was organised along very similar lines to the 1918 division, but with even further refinements. The infantry battalions had one less rifle company, while the infantry regiments had an infantry gun company added. The cavalry squadron was expanded to become a full reconnaissance battalion, while the *pionier* battalion had a third *pionier* company added and lost its mortars to the infantry battalion's heavy company (ex MG company). The artillery and *Feldersatz* battalions changed only in detail, while the signals command was expanded to become a full signal battalion. The divisional support units were also similar although the 1939 divisions had considerably more motorisation and more transport (supply) columns. One of the biggest fundamental changes (since 1918) was the division's anti-tank capabilities: by September 1939 a dedicated *panzerjager* (anti-tank) battalion was added to the division structure, and an anti-tank company was added to each infantry regiment.

Through 1940 and 1941 the TOE of German infantry divisions continued to be refined, but most of these involved relatively small changes to the basic 1939 pattern.³ The combat, signal, transport and supply elements of a 1st wave infantry division in June 1941 are shown in table [1st Wa ID June 1941](#) and accompanying chart [Ger ID June 1941](#). At first glance a German 1941 1st wave infantry division does not look exceptional compared to contemporary infantry divisions from some other countries: especially on a cursory examination of available weapons and overall size. This is illustrated in the table below.⁴

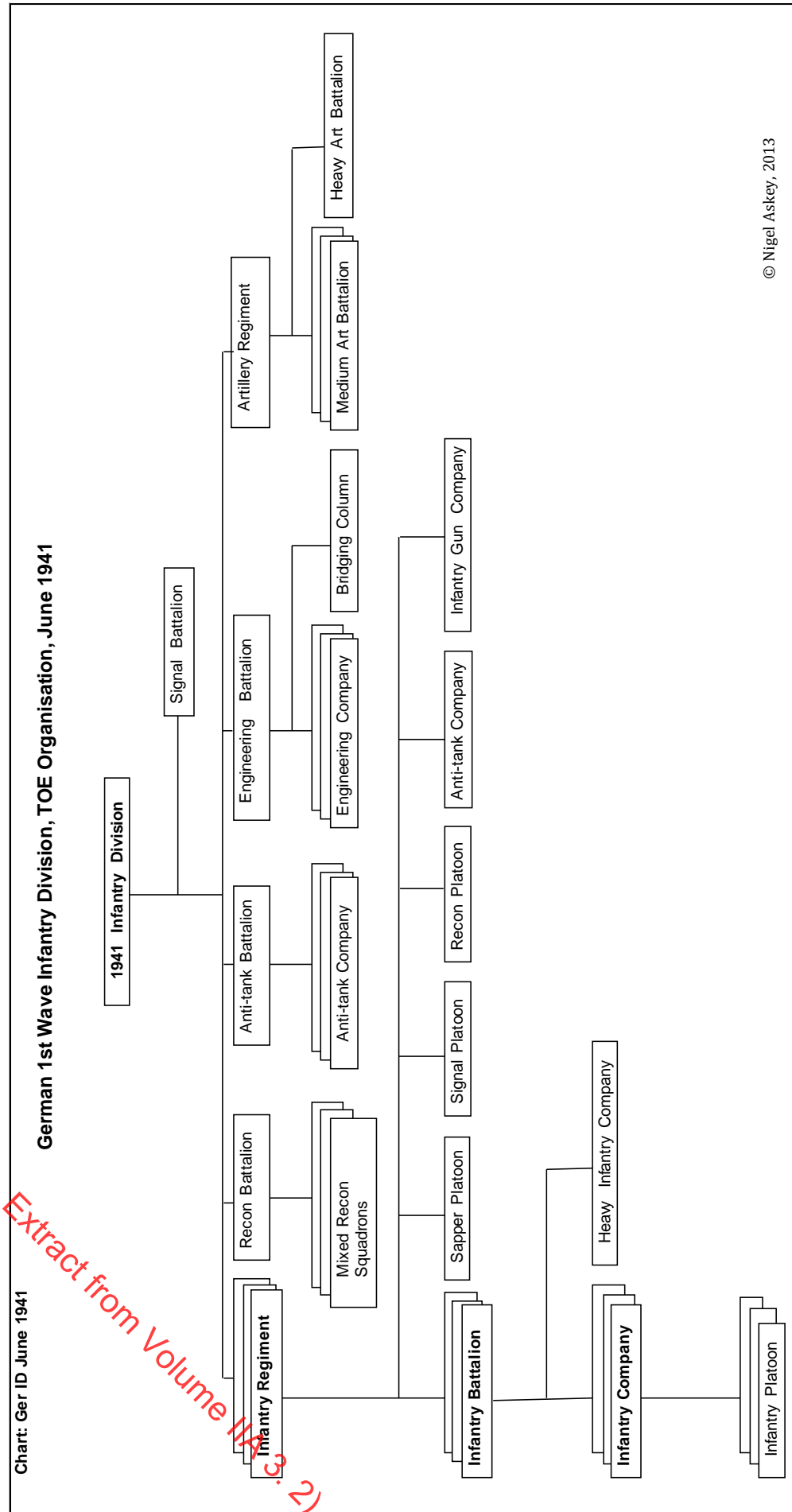
³ The biggest change during WWII occurred in the autumn of 1943 with the development of the smaller type 44 infantry divisions. This was based on three infantry regiments (now called grenadier regiments) of only two battalions each: six infantry battalions per division instead of nine. In addition, reconnaissance, tank-destroyer and signal battalions were frequently down-sized to companies. The type 44 infantry divisions fielded in 1944-45 were thus much smaller, had less equipment and had fewer motorised vehicles compared to the 1939-41 infantry divisions. As the situation grew even more desperate in late 1944, the *Volkgrenadier* (People's Grenadier) divisions were organised. They were organised along the lines of the type 44 division, but lacked the manpower and heavy equipment of earlier infantry divisions, and they were often equipped with obsolete or foreign equipment.

⁴ Data from Volume I Part I 9. 1) – 'The Concepts and General Structure of the Integrated Land and Air Resource Mode - A Divisional Sized or Division Equivalent Combat Unit in WWII - What was a Divisional Sized Combat Unit in 1941?'. Refer to this section for more detailed discussion on contemporary infantry divisions.

Divisional Comparisons, 1941										
Rifle-Infantry Division	Personnel	LMG- GPMG	MMG- HMG**	Motor Vehicles	Horse Teams	AT Guns	Mor < 61mm	Mor > 61mm	Art < 90mm	Art > 90mm
Soviet (pre June 41)	14500	392	166	607	1100	54	84	66	34	44
German*	16900	435	112	753	1189	72	84	54	20	54
Finnish	14700	432	108	168	1338	24		36	24	12
Rumanian	17500	402	148	153	950	30	60	21	54	16
Italian	14300	270	80	86	1000	24	126	30	32	12
Japanese (type B)	20000	382	112	150-200	2290	22	340		66	
US (1943)^	14300	157	236	2012		57	90	54		66
UK	17300	819	48	2158		48	162	56	72	
Average	16188	411	126	764	983	41	118	40	38	26
* LMGs were MG-34 GPMGs with considerably more firepower than contemporary LMGs: the only modern day squad GPMG equivalent in service.										
^ Does not include 243 Browning Automatic Rifles (BARs). LMGs shown are Browning .30in MGs										
** Excludes MGs used primarily as AAMGs										

According to the above, the only areas where the Germans possibly enjoyed a significant numerical advantage was in the number of motor vehicles and anti-tank (AT) guns. (Note, there were relatively few UK or US infantry divisions in existence; hence their full motorisation). Of particular note is that the Soviet April 1941 rifle division had two artillery regiments compared to only one in most other army's comparable infantry divisions. However (and there is always a lot of 'however's' in a simple analysis such as that above) the German 1941 1st wave infantry division was a very evolved organisation resulting from unequalled combat experience. It possessed a number of organisational and equipment subtleties (discussed in the next section), which meant it was probably the most formidable all-round infantry division fielded during 1941.

Extract from Volume IIA 3. 2)



Extract from Volume IIA

Table 1st Wa ID June, 1941
TOE, German 1st Wave Infantry Division, June 1941 (Combat, Signal, Transport and Supply Elements)

	IPL	ICo*	HIC^	B Sup**	I Bat	SaP	Sig Pl	ReP	ATC*^	InG Co^^	R Sup*~	I Reg	ReB~~	ATB~*	ArR***	EnB***^	Sig B**^^	D Sup^^^	I Div
H Rifle Sqd	4	12			36							108							324
50mm Mor	1	3			9							27							84
LMG			12		12							36							112
LMG						4						4	19	18	24				75
AT Rifle		3			9							27			9				90
81mm Mor			6		6							18							54
Horse Team***	1	8	24	9	57	4	3	1		24	5	208	5	279	18	8	255		1189
Trucks		1		3	6				13		2	33	27	68	30	43	28		516
Light Transport								15				15	17	36	4	14	68		237
Motor Cycle Sqd^^^				1	1			4			1	8	7	8	6	7	4		74
Bicycle Sqd													12						12
Cav Sqd							3					3	15						24
75mm Inf G								6				6	2						20
150mm Inf G								2				2							6
37mm ATG								9				9	3	36					66
50mm ATG								2				2							6
Light Halftrack								4				4							12
Medium Halftrack																	2		2
Eng Sqd						3						3							36
Light Eng Sqd					3							3				27			9
Sd.Kfz 221 A Cars													2						2
105mm How																			36
150mm How																			12

Refer attached notes for organisational details.

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<p>Notes for: TOE German 1st Wave Infantry Division, June 1941 (Combat, Signal, Transport and Supply Elements).</p> <ul style="list-style-type: none"> * Includes Company Combat Trains, Ration (Provision) Trains and Baggage Trains (KStN 131c 01/02/1941). ^ Includes Company Combat Trains and Ration (Provisions) Trains (KStN 151c 01/02/1941). ** Includes Battalion HQ, Signal Detachment, Combat Trains, Provisions Trains I and II, Baggage Trains and Auxiliary Trains. *^ Includes Company HQ, 4x ATG Platoons, Maintenance Section and Company Trains (KStN 184c 01/02/1941). One ATG platoon was authorised 2x 50mm PaK 38 AT guns. ^^ Includes Company HQ, 3x Light IG Platoons, 1x Heavy IG Platoon, Ammunition Detachment, Combat Trains, Provisions Trains and Auxiliary Trains. *~ Includes Regimental HQ with HQ, Combat Trains, Provisions Trains and Baggage Trains. <p>Also includes the Regiment Band, whose members were also used as medical orderlies, stretcher bearers, etc.</p> <ul style="list-style-type: none"> ~* Includes Battalion HQ, Signal Detachment, 1x Motorised Heavy Recon Company, 1x Bicycle Company, 1x Cavalry Company, and all Battalion and Company support trains. ~** Includes AT Battalion HQ, 1x Signal Platoon and 3x AT Companies (all motorised). Includes all Battalion and Company support trains (KStNs 1106, 1192 and 1141, all 01/02/1941). *** Includes Regimental HQ, 1x Signal Platoon, 1x Motorised Weather Platoon and 1x Motorised Printing Detachment, 3x Light Artillery Battalions each with 3x Batteries of 4 105mm howitzers, and 1x Heavy Artillery Battalion with 3x Batteries of 4 150mm howitzers. Includes: all Regimental HQ support trains, all Battalion HQ support trains, Signal Platoons and Calibration Sections, and all Battery HQs, Signal Detachments, Ammunition Detachments and support trains. **^ Includes Battalion HQ, Battalion Band, 2x Pioneer (Combat Engineer) Companies, 1x Motorised Pioneer (Combat Engineer) Company and 1x Motorised Light Engineer Transport Column. <p>Includes all Battalion and Company signal detachments and support trains. The Pioneer Battalion also carried 9 flamethrowers, and typically 1140 'Teller' Anti-Tank Mines, and 1934 'Schutzen' Anti-Personnel Mines.</p> <ul style="list-style-type: none"> *^^ Includes Battalion HQ, 1x Semi-Motorised Telephone Company, 1x Motorised Radio Company Type "a", and 1x Motorised Light Signal Column Type "a". Includes all Company HQs, Combat Trains, Provisions Trains and Baggage Trains. ^^^ Includes all the following: <ul style="list-style-type: none"> i) Infantry Division HQ with Divisional Mapping Detachment, Military Police Platoon and Field Post Office (all motorised). ii) 1x Divisional Supply Commander (HQ with support units), 3x Motor Transport Columns (30 tons), 1x Motor Transport Column for Fuel (POL column, 25 cbm), 1x Supply Company, 1x Workshop (Maintenance) Company, 1x Butchery Company, 1x Bakery Company Type "e", and 1x Commissary Office (all motorised). iii) 3x Transport Columns, 3x Light Infantry Columns and 1x Veterinary Company (all horse drawn or semi-motorised). iv) Medical units consisting of 1x Medical Company, 1x Field Hospital and 2x Ambulance Platoons (all motorised), and 1x horse-drawn Medical Company. <p>^^** All artillery hitch and limbers (6-8 horses each) are included in horse team figures. The 15cm sFH 18 how breaks down into two loads for transport. Total limbers in the Division was 84. There was over 1 740 saddle horses and 3 630 draft horses in the TOE (with 3x Horse Drawn Transport Columns and 3x Horse Drawn Light Infantry Columns in the divisional supply columns).</p> <p>^^^ The Division contained over 490 motorcycles, and approximately 190 of them had sidecars.</p>	<p>Principal References:</p> <p>Buchner A., The German Infantry Handbook 1939-1945, Schiffer, Atglen PA, 1991.</p> <p>Niehorster L.W.G., German WWII Organisational Series, Volume 1-II-1, 1st and 2nd Welle Army Infantry Divisions, The Military Press, Milton Keynes, UK, 2006 pp. 15-53.</p> <p>Niehorster L.W.G., German WWII Organisational Series, Volume 3/I, Mechanized Army Divisions, The Military Press, Milton Keynes, UK, 2004 pp. 50 and 68.</p> <p>Nafziger, G.F., The German Order of Battle, Infantry in World War II, Greenhill Books, London, 2000, pp. 415 and 416.</p> <p>Mueller-Hillebrand, B., Das Heer 1933-1945, Vol 1 and 2, Verband der Truppen der deutschen Wehrmacht und Waffen SS 1939-1945, Frankfurt am Mein, 1956.</p> <p>U.S. War Department, Handbook On German Military Forces, Louisiana State University Press, Baton Rouge, 1990, pp. 86-92, 111, 176.</p> <p>Purnell's Illustrated Encyclopedia of Modern Weapons and Warfare, Part 12, Phoebus Publishing, London 1980, pp. 236-238.</p> <p>Hogg, I.V., Infantry Weapons of World War II, Saturn Books Ltd, London, 1997, pp. 6 and 7.</p> <p style="text-align: right;">© Nigel Askey, 2013</p>
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Extract from Volume IIA 3. 2)