



Dennis Oliver



A newly-assembled Sdkfz 234/2 armoured car photographed with an Sdkfz 234/3 and Sdkfz 250 halftrack. Features to note on the vehicle in the foreground are the racks for the fuel containers, the fire extinguisher and smoke candle dischargers. This photograph may have been taken at the Panzer-Aufklärungs training centre at Kramprnitz which had numbers of all these vehicles.



LandCraft 12

PUMA

SDKFZ 234/1 AND 234/2

HEAVY ARMoured CARS

GERMAN ARMY, WAFFEN-SS AND LUFTWAFFE UNITS

WESTERN AND EASTERN FRONTS, 1944-1945

Dennis Oliver

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Front cover. At top: Tamiya's Sdkfz 234/2 armoured car in 1/35 built and painted following the kit instructions to represent a vehicle of Panzer-Aufklärungs-Abteilung 20. The photographs in the centre depict, from left to right, an Sdkfz 234/2 photographed in early 1945. One of the Sdkfz 234/1 vehicles allocated to Panzer-Aufklärungs-Abteilung 4. A disabled Sdkfz 234/2 of Panzer-Aufklärungs-Lehr Abteilung 130 photographed in Normandy in 1944. The illustration at the foot of the page depicts an Sdkfz 234/2 of Stabskompanie, Panzer-Aufklärungs-Abteilung 20 and may be the vehicle shown in the first image above. It is also discussed in the Camouflage & Markings section of this book.

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The development of the 8-Radwagen, or eight-wheeled armoured car, which would eventually become the Sdkfz 234 series of vehicles, was an attempt to capitalise on the mobility, speed and range of the Sdkfz 231 which had been in service since the beginning of the war. These early designs had shown the value of a fast-moving vehicle with all-wheel steering but they were lightly armed and had been conceived with the temperate climate of northern Europe in mind.

By 1941, with the commitment to North Africa and the invasion of the Soviet Union, the reconnaissance elements of the German army found themselves operating in barren, often hostile, environments and these units were almost always at the forefront of any advance and were regularly forced to fight their way forward, a task for which the light armament of the pre-war designs was ill suited. The introduction in July 1942 of the 7.5cm-armed Sdkfz 233, the first of which were allocated to units destined for Tunisia, went some way towards remedying this but the development of the Sdkfz 234, which offered simplified design features, a lower silhouette and greater mechanical reliability, was well underway by that time (1).

In the first part of this series (2), we considered the Sdkfz 234/3 and Sdkfz 234/4 and in this book we will analyse the technical aspects of the Sdkfz 234/1 and 234/2, the models which entered service

first and also accounted for the bulk of production. The contrast in their intended missions can be seen by comparing the official tables of establishment (3) presented in the first part and those rendered on pages 60, 61, 62 and 63 of this book.

The fact that armoured cars were usually found at the Schwerpunkt, or the point of main effort, meant that relatively few were photographed and the reader will notice that many of the images in this book depict captured or abandoned vehicles. The comparatively small numbers of Sdkfz 234 vehicles produced, and their late introduction into service, also contributed to this.

The illustrations presented in this book and the remarks made regarding camouflage colours were all based on contemporary photographs and official documents but are essentially my interpretations and where aspects are the subject of debate I have endeavoured to make this obvious.

To create a clear picture of the development and use of the Sdkfz 234/1 and 234/2 it was essential that some information from the first book, particularly that concerning allocations, is repeated in this volume and I trust readers will forgive this. I should also mention that I have deliberately avoided the use of the term Puma although there is some evidence, as mentioned in the note on page 14, that it was in fact employed during the war.

Notes

1. The Sdkfz 233 was not a new design but a conversion based on an existing model. It was as much an attempt to utilise the surplus 7.5cm L/24 guns as it was to create an effective weapon system.
2. *LandCraft 11: Pakwagen Sdkfz 234/3 and 234/4 Heavy Armoured Cars, German Army, Waffen-SS and Luftwaffe Units, Western and Eastern Fronts, 1944–1945.*
3. Referred to as Kriegsstärkeachweisungen, abbreviated to KstN.

Said to have been photographed on the Oder Front in early 1945, the Sdkfz 234/1 armoured car at right is accompanied by several Sdkfz 251/1 halftracks and another armoured car visible in the distance. The insignia on the rear access door of one of the halftracks, although obscured, is similar to that used by 25. Panzergrenadier-Division and that unit was allocated two Sdkfz 234/1 vehicles in February 1945 and took part in the fighting around Küstrin, modern-day Kostrzyn nad Odra on the Oder River, eventually withdrawing to Berlin.



SDKFZ 234 PRODUCTION, 1943-1945

Accurate production figures for the Sdkfz 234 series armoured cars are not available but we can gain some insight into the monthly totals by examining the numbers of vehicles accepted by the Heereswaffenamt and the allocations to training establishments and combat units. The latter is examined in detail on pages 58 and 59. Where I have been forced to use approximations I have tried to make this clear.

	Sdkfz 234/1		Sdkfz 234/2		Sdkfz 234/3		Sdkfz 234/4	
	Accepted	Allocated	Accepted	Allocated	Accepted	Allocated	Accepted	Allocated
August 1943			1 (1)					
September 1943			2 (2)					
October 1943								
November 1943								
December 1943			4 (3)	1				
January 1944			5	5				
February 1944			12	12				
March 1944			22	18				
April 1944			30	23				
May 1944			19	17				
June 1944	(4)		7	18	(4)			
July 1944	12 (5)	45	2 (6)	2		13		
August 1944	(7)	7			(7)	6		
September 1944	(8)	41	2	1	(8)			
October 1944	35	29		2	1	16		
November 1944	27	25		5	13	12		
December 1944	11	15		3	17	23	25	25
January 1945	37	26		3 (9)			3	18
February 1945	22	11					26	22
March 1945	18 (10)	18					17 (11)	6 (12)
April 1945		17						

1. Trial vehicle. 2. Trial vehicle. 3. The first series production models. 4. In this month a total of fifty-three Sdkfz 234/1 and Sdkfz 234/2 vehicles were accepted but unfortunately there is no detailed breakdown and they are merely recorded as Panzerspähwagen. The allocation of forty-five Sdkfz 234/1 versions would suggest that type made up the bulk of the delivery. 5. This number also represents Sdkfz 234/1 and Sdkfz 234/3 models. 6. At least one of these vehicles was returned from repair. 7. In this month a total of thirty-one Sdkfz 234/1 and Sdkfz 234/2 vehicles were accepted but again there is no detailed breakdown. 8. In this month a total of forty-one Sdkfz 234/1 and Sdkfz 234/2 vehicles were accepted but there is no detailed breakdown. 9. This number is provisional and the last allocation of these vehicles may have been the three assigned to 7. Panzer-Division in the previous month. 10, 11 and 12. These figures are all approximations.



An Sdkfz 234/2 armoured car of 1. Kompanie, Panzer-Aufklärungs-Abteilung 2 photographed in France during the summer of 1944. Other vehicles of this battalion are shown on page 18 of the Camouflage & Markings section and the numbering system is explained on page 62.

The first examples of the Sdkfz 234/2, commonly referred to today as the Puma, were allocated to training units in September 1943 and it was intended that these vehicles would equip the reconnaissance battalions of Panzer divisions that were to be reorganised according to new *Kriegsstärkenachweisungen* (KstN) establishments by early 1944. The Sdkfz 234/1 with its 2cm gun in an enclosed turret was designed to replace the lightly-armoured scout cars that had been in service since the beginning of the war and, in terms of numbers produced, this model was the most important version of the Sdkfz 234 series. The following text gives brief histories of the units that were equipped with these large armoured cars but it should be mentioned that the numbers given here, and in the charts on pages 58 and 59 indicating vehicles assigned to certain units, have for the most part been taken from the *Zuhführungliste*, or shipping lists, and while these are consistently accurate, even those recorded in the last weeks of the war, they do represent vehicles assigned and not necessarily those that arrived. Where this is known I have tried to make it clear. The references made here to KstN and other organisational terms are explained in detail in the final section of this book which begins on page 60. Units which operated the other vehicles of this series, the Sdkfz 234/3 and 234/4, were examined in *LandCraft 11: Pakwagen, Sdkfz 234/3 and 234/4 Armoured Cars German Army, Waffen-SS and Luftwaffe Units Western and Eastern Fronts 1944-1945* and are listed here with the notation 'See LC 11', for the sake of completeness. There is of course some overlap between the two groups and I trust readers will forgive any repetition. The abbreviation PzAA, for Panzer-Aufklärungs-Abteilung, or armoured reconnaissance battalion, is used throughout this section.

1. Panzer-Division. See LC 11.

2. Panzer-Division. The division's PzAA 2 was formed on 16 March 1943 by renaming *Kradschützen-Batallion 2*. The division fought on the Eastern Front and by the end of the year had been transferred to France to be rebuilt. At this time PzAA 2 was reorganised according to the KstN issued in November 1943 and this is shown in the chart on page 60. Although the battalion received orders in May 1944 to re-establish its companies in line with the *frei Gliederung* principles that were introduced in the previous month it appears that this did not take place before August. At the commencement of the battles in Normandy the battalion was under the command of Major Bernhard von Schkopp and 1. Kompanie, organised according to KStN 1162a of 1 November 1943, contained a full complement of twenty-five Sdkfz 234/2 armoured cars. This formation was one of just two battalions that received their complete allocation of these vehicles (1). The numbering system employed by 1. Kompanie was quite unusual and is explained in the diagram on page 62.

Most accounts suggest that the battalion was completely destroyed during the fighting for the Falaise Pocket in August 1944 but in the first week of the following month the commander reported that nine Sdkfz 234/2 vehicles were still on hand but were now with the battalion's *Stabskompanie*. Their placement proves that the reorganisation to the April KstN had taken place or had at least begun. A number of accounts mention that a single Sdkfz 234/1 and three Sdkfz 234/3 armoured cars were also with the *Stabskompanie* but the division never received any of these vehicles before November 1944 and the armoured cars in question were actually Sdkfz 233 and Sdkfz 232 models.

In November 1944 the battalion was rebuilt and in the same month two Sdkfz 234/1 and two Sdkfz 234/2 were shipped from the *Heereszeugamt* (2). It is possible that the latter were vehicles taken over from *Panzer-Lehr-Division*. During the

Ardennes Offensive the battalion formed the nucleus of a large *Kampfgruppe* led by *Hauptmann von Böhm* (3) that was reinforced with tank and armoured infantry units as the battle progressed.

At that time the *Stabskompanie* contained the eleven Sdkfz 234/2 and two Sdkfz 234/1 armoured cars that the battalion possessed. In addition there were a number of Sdkfz 233 and Sdkfz 232 vehicles and three armoured halftracks. Interestingly the Sdkfz 234/2 armoured cars retained the numbering system that was used by 1. Kompanie in Normandy. *Kampfgruppe von Böhm* formed the division's spearhead and was able to advance further than any other German unit, reaching the area between Foy-Notre-Dame and Dinant on the morning of 24 December 1944. But there they were cut off by British armoured units and *Hauptmann von Böhm* and 147 men of his *Kampfgruppe* were taken prisoner and PzAA 2 effectively ceased to exist.

In 1945 an attempt was made to rebuild the division by merging the remnants with *Panzer-Ausbildungs-Verband Thüringen*, an ad-hoc unit made up principally from training units stationed at Bergen, with PzAA 2 but no further allocation of armoured cars is recorded (4). Vehicles of PzAA 2 are depicted on pages 18 and 21 of the *Camouflage & Markings* section of this book.

4. Panzer-Division. Formed by renaming *Kradschützen Battalion 34* on 30 April 30 1943, the division's PzAA 4 retained the November 1943 organisation of a headquarters and five companies throughout the war. During January 1945 the battalion was withdrawn from the front and at that time was allocated one Sdkfz 234/1 and six Sdkfz 234/4 armoured cars. These probably arrived in mid-February and were all assigned to the battalion's 1. Kompanie (5). In the same month the battalion also received sixteen Sdkfz 250 armoured halftracks. In March 1945 the battalion was consolidated with PzAA München (see below). A vehicle of PzAA 4 is depicted in the *Camouflage & Markings* section of this book on page 24.

Notes

1. The other formation was the reconnaissance battalion of the *Panzer-Lehr-Division*.
2. The *Heereszeugamt* was the army's supply directorate. The last heavy armoured cars did not arrive until April 1944.
3. This officer is something of a mystery. In most accounts he is mentioned as the commander of PzAA 2, replacing Major von Schkopp in August 1944, but does not appear in any of the surviving division lists nor in the comprehensive *Deutsche Truppen im Zweiten Weltkrieg Band 2* which covers, among other units, 2. Panzer-Division. An award document dated October 1944 suggests that Major von Schkopp was still with the battalion at that time but he was attached to *Panzer-Brigade 106* by early January 1945 at the latest.
4. Interestingly, *Hauptmann Walter Helmut*, the commander of *Panzer-Ausbildungs-Verband Thüringen*, was nominated for the award of the *Ritterkreuz* on 9 May 1945, one day after the official German surrender.
5. There is some debate over these figures with at least one authoritative source stating that the shipment was made up of seven Sdkfz 234/1 vehicles.



At left and below: Sdkfz 234/2 armoured cars of 1. Kompanie, Panzer-Aufklärungs-Abteilung 2 photographed in Normandy during the summer of 1944. This battalion, and Panzer-Aufklärungs-Lehr-Abteilung 130, were the only units to receive a full allocation of twenty-five of these vehicles. Variations can be seen in the application of the Balkenkreuz national insignia with some rendered as white outlines only while most have a dark centre section. On some vehicles, notably 1. Truppe, the Balkenkreuz was placed behind the turret number. The colour used for the centre of the numbers is a matter of longstanding debate with some sources suggesting that they are red while others state that they are black. My personal feeling tends toward the latter.

Although not visible here, the Truppe numbers, in this case 5 and 11, were repeated on the side of the mudguard on the first locker door. The numbers were rendered in white for the first vehicle of the Truppe and in black for the second. The unusual numbering system and its meaning is explained in detail on page 62. All vehicles were painted in a base coat of RAL 7028 Dunkelgelb, the factory standard of the time, and camouflaged with RAL 8017 Rotbraun and RAL 6003 Olivgrün in patterns made up of random strokes and swirls and examples are shown on pages 18 and 21 of the Camouflage & Markings section.



Notes

1. The allocation of these vehicles is not mentioned in some accounts and disputed in others but the presence of these Sdkfz 234/2 armoured cars during the summer of 1944 is verified by photographic evidence.

6. Panzer-Division. In June 1944 the division's PzAA 6, less 4. Kompanie, was being rebuilt at Bergen in Germany and at that time was allocated three Sdkfz 234/3 armoured cars. In August three Sdkfz 234/1 vehicles were shipped by the Heereszeugamt (1) and in the following month another ten armoured cars of the same type were despatched. The Sdkfz 234 series vehicles were all assigned to the Stabskompanie and the other companies were equipped with Sdkfz 250 halftracks. The battalion returned to the front and took part in the defence of Vilnius in Lithuania and the fighting along the Bug and Narew Rivers in East Prussia.

By early December 1944 the division had been moved to north-west Hungary and was engaged in the defensive battles around Budapest and the subsequent attempts to relieve the German garrison. In early 1945 the battalion was involved in the defence of Vienna. The survivors retreated towards the west and surrendered to units of the US Army at Jihlava, north-west of Brno in Czechoslovakia, but were handed back to the Soviets. An Sdkfz 234/1 armoured car of PzAA 6 is shown on page 23 of the Camouflage & Markings section of this book.

7. Panzer-Division. The division's PzAA 7 was created on 1 April 1943 by renaming Kradschützen-Bataillon 7. The battalion was allocated six Sdkfz 234/2 armoured cars in February 1944 and was the first combat unit to receive the type. These heavy vehicles were all concentrated in 1. Kompanie until July 1944 when the

battalion was reorganised and the Sdkfz 234/2 armoured cars were assigned to the battalion's Stabskompanie (2).

By the autumn of 1944 the division was engaged in the defensive battles in Lithuania and Latvia, most notably around the port city of Memel, present-day Klaipeda. The survivors of the division were evacuated to Pillau in Germany by sea at the end of 1944 and moved to the training centre at Arys in East Prussia where the battalion was rebuilt. It was probably at this time that three further Sdkfz 234/2 vehicles were received. In mid-January 1945 the division returned to the front and took part in the defensive battles between Soldau and Elbing and eventually withdrew towards Danzig, modern-day Gdansk in Poland. Forced with a number of other formations into the Oxhöfer Kämpe, a large cliff formation on the Bay of Gdansk, the division was again evacuated by sea, leaving all its heavy equipment behind.

The last remnants of PzAA 7, possibly enough to form a company-sized unit, fought as infantry against British troops around Mecklenburg and many of these may have been men of 3. Kompanie, PzAA 12 which was transferred to the battalion in late April 1945. Vehicles of PzAA 7 are depicted on pages 19 and 22 of the Camouflage & Markings section of this book.

8. Panzer-Division. The division's PzAA 8 was reorganised according to the April 1944 frei Gliederung KstN establishments and in August of the same year was allocated three Sdkfz 234/3 armoured

cars. In the following month thirteen Sdkfz 234/1 vehicles were shipped to the battalion, bringing it to its full authorised strength. In January 1945 the battalion reported that fifteen heavy armoured cars were still on hand and as no Sdkfz 233 vehicles (1) were issued to this unit these must be survivors of the August and September shipments.

In February 1945 the battalion contained eighteen heavy armoured cars, all concentrated in the Stabskompanie, and four companies equipped with Sdkfz 250 halftracks. In March 1945 a total of four heavy Panzerspähwagen (2) were shipped to the battalion and these may have been Sdkfz 234/4 armoured cars.

9. Panzer-Division. The complete division, with PzAA 9, was withdrawn from the Eastern Front in April 1944 and reorganised using the frei Gliderung KstN establishments. In June, PzAA 9 was allocated thirteen Sdkfz 234/1 armoured cars and in July three Sdkfz 234/3 vehicles were shipped and these were all assigned to the battalion Stabskompanie. This unit was also authorised a reconnaissance company formed with KstN 1162b, the fully-tracked version, equipped with the Pztkpfw II ausf L Luchs. The division suffered heavily in the Normandy battles but by September 1944 had been rebuilt to almost full strength, reporting that five Sdkfz 234/1 and three Sdkfz 234/3 were on hand. In the same

month the division took part in the fighting south of Aachen and in October 1944 was subordinated to II.SS-Panzerkorps for the assault on the Nijmegen bridgehead. In November 1944 a total of ten Sdkfz 234/1 and two Sdkfz 234/3 armoured cars were dispatched by the Heereszeugamt but the former were delivered to 9.SS-Panzer-Division and it is unclear if this was as a result of an administrative error or simple opportunism. In any event this was the last allocation of heavy armoured cars made to the battalion. This left PzAA 9 with three Sdkfz 234/1 and a single Sdkfz 234/3 vehicle and by the end of November the battalion had undergone an unofficial reorganisation with the heavy armoured cars removed from the Stabskompanie and placed in 1.Kompanie with the remaining six Pztkpfw II tanks. The division was rebuilt for the Ardennes Offensive and although its losses in this operation were light, the vehicle strength of PzAA 9 was far below its authorised allocation. The heavy armoured cars were still with 1.Kompanie and one Sdkfz 234/3 had been added and as there is no record of any new allocation, this may have been a vehicle returned from repair.

In early 1945 the division was defending the West Wall positions between Erkelenz and Erft and gradually fell back into Cologne where it was involved in house-to-house fighting. By the first week of March 1945 PzAA 9 had been almost completely destroyed.

Notes

1. The Sdkfz 233 was an earlier eight-wheeled armoured car armed with the 7.5cm gun. Production ended in October 1943 but many were still in service when the war ended.
2. Literally, heavy armoured scout cars. Unfortunately the Zuhführungsliste often refer to allocations using this generic term only without mention of a specific type or model.



Captured German equipment photographed at the Allied collection point at Celles, south-east of Dinant in Belgium, after the Ardennes Offensive. The Sdkfz 234/2 armoured car in the background, one of several that were operated by Kampfgruppe von Böhm, was shipped to the United States after the war and is in fact the vehicle shown on page 9. Other images clearly show the small brackets welded to the turret sides and a field-modified handle fitted to the hull forward access door, all identifying features of Panzer-Aufklärungs-Lehr-Abteilung 130 armoured cars.