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## Background

- **Armor** refers to combat vehicles, protected by armor and generally armed, which combines operational mobility with offensive and defensive capabilities. They can be wheeled, tracked or a combination thereof.
- War wagons were medieval armor developed around 1420 by undefeated Hussite general Jan Žižka in Bohemia. Heavy wagons with protective sides and firing slits were manned by 16-22 soldiers armed with crossbows, handguns (*píšťala*, a Žižka innovation), pikes and flails. He invented field artillery by mounting cannon (*houfnice*) on carts in between the wagons.
- The first armed car was developed in 1898 (right). Armored cars mounted with machine guns followed in 1899 (left).



Armored cars were widely used in WWI as scouting vehicles.



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- Britain and France developed the tracked tank to break the stalemate on the Western Front. In 1915 the British produced their first prototype tank, and used tanks for the first time at the Battle of the Somme in September 1916. They produced about 2,600 tanks of varying types during the war.



- The French pioneered the use of a 360° rotating turret with the Renault FT light tank in 1916. Its engine was located at the rear. By late 1918, 3,000 FTs had seen action.



- Battlefield success and improved technology brought armor applications in other areas, such as troop carriers (1917), self-propelled artillery (1917), and SP anti-aircraft weapons.

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- After WWI, the Allies tended to focus more on cost-cutting, theory and inter-branch rivalry than on learning lessons from WWI.

–A few champions argued against Infantry control of tanks and for new armor tactics and equipment, including Patton and Eisenhower.



A new combined-arms concept -  
the flying tank



Combating the new combined-arms concept -  
the flying anti-tank gun

–France did build up its armor and was ready to fight WWI all over again.

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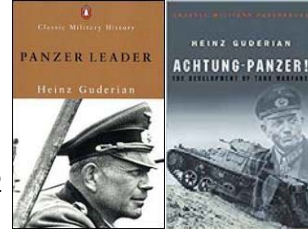
- General Erich Ludendorff concluded that Allied tanks were a principal factor in Germany's defeat. The Germans studied motorized warfare, with Major **Heinz Guderian** studying armor worldwide development. Guderian argued for *Blitzkrieg* with armor divisions:



- ⊕ Airpower is critical for support of armored formations in ground combat.
- ⊕ Concentrate armored formations at the point of attack (*Schwerpunkt*) to penetrate enemy lines deeply.
- ⊕ Armored divisions should operate in combined-arms formations in close coordination with motorized/mechanized infantry and artillery.
- ⊕ Tank crews are teams that must be able to communicate with each other.
- ⊕ Commanders must be able to communicate with each other and sub-units.
- ⊕ Successful tank attacks require surprise, deployment in mass, and suitable terrain. The job of panzers is “to break through and keep going.”
- Hitler empowered Guderian to put his ideas into practice, placing him in command of the first panzer division in 1935 and a tank corps in 1938.

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- ✘ Heinz Guderian was a communication specialist in the Signal Corps in WWI. He was selected to remain an army officer allowed by the Treaty of Versailles. In 1922, he was appointed Inspector of Motorized Troops. He studied the experience of tanks in WWI and was employed as a teacher of tank tactics.
- ✘ Commanding a motorized battalion in 1930, he organized his companies into a tank scout company, a tank company and an anti-tank company. He also developed a radio-communication system for tank officers.
- ✘ He took over the 2<sup>nd</sup> Panzer Division in 1935 as a colonel. Three years later he was a lieutenant-general.
- ✘ He led the Blitzkrieg of Poland in September 1939.
- ✘ He led the 1940 attack on France, crossing the Meuse River in 2 days. Ordered to wait for Infantry to catch up, he resigned.
- ✘ Reinstated by Hitler, his panzers captured Boulogne on the English Channel in ample time to prevent the British Expeditionary Force evacuation from Dunkirk, but was again ordered to halt because the Infantry couldn't keep up.
- ✘ Leading the 2<sup>nd</sup> Panzer Group during Operation Barbarossa, his troops captured Minsk, Smolensk and Kiev and reached the outskirts of Moscow when winter set in. He made a limited withdrawal to good defensive ground and then travelled to Berlin to argue with Hitler about tactics. He was dismissed from office on Christmas Day.
- ✘ After Germany suffered further losses at El Alamein and Stalingrad, Guderian was again reinstated as commander of the Armored Troops, but the tide had turned and he was defeated at the Battle of Kursk.
- ✘ He was appointed Chief of the General Staff, but continued to argue with Hitler over strategy and was finally dismissed on 28 March 1945. Captured by the US Army in May, he was released in 1948 and died in 1954.



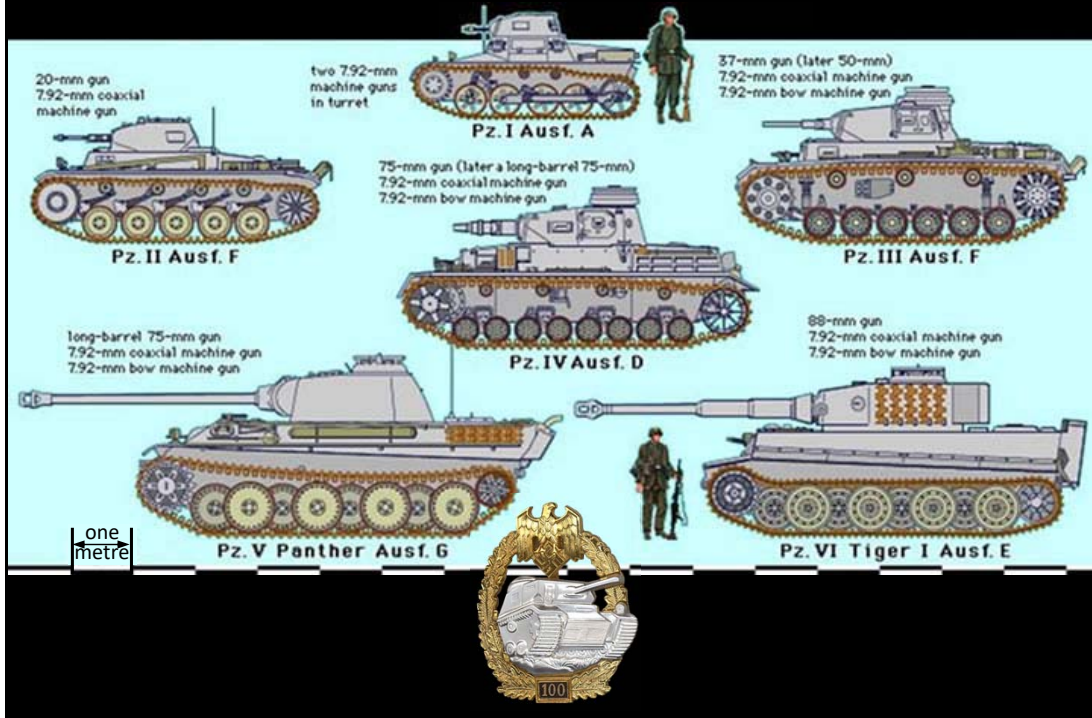
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## Axis Tanks and Tank Destroyers

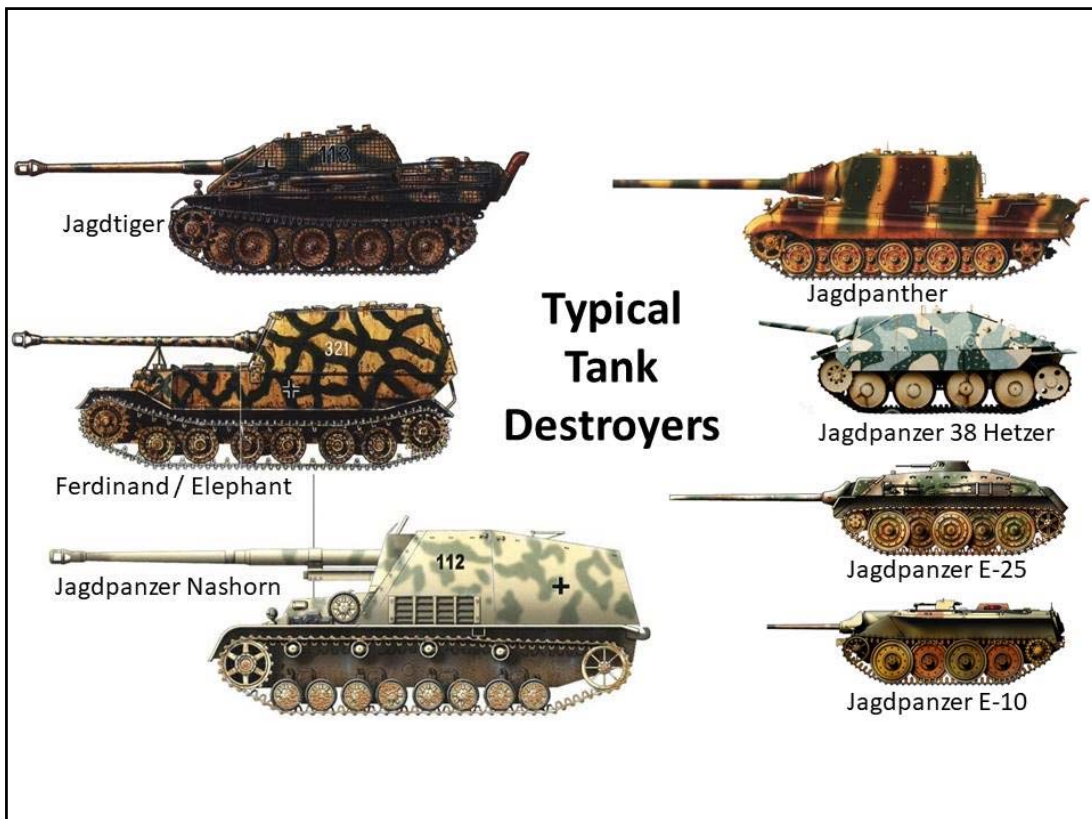


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# Panzerkampfwagen Series I, II, III, IV, V, VI



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## Allied Tanks and Tank Destroyers



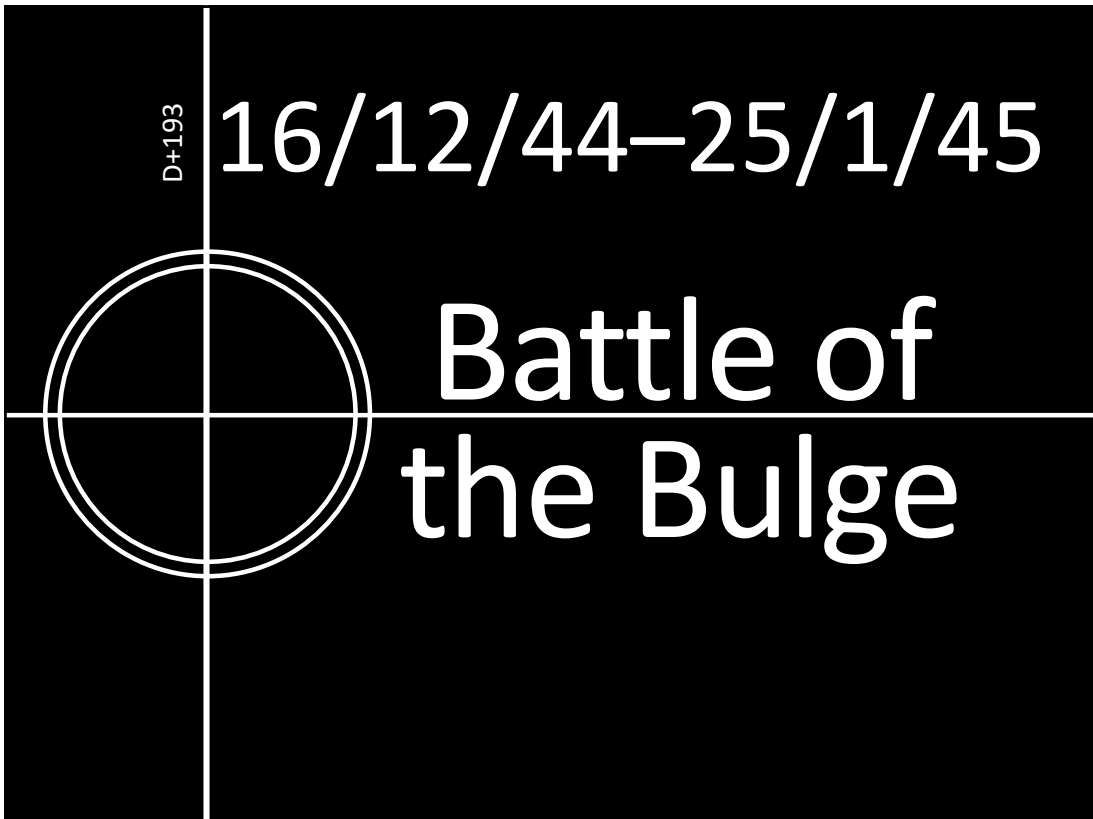
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## The Allied Position

After the breakout from Normandy and the Allied landings in Southern France on 15 August 1944, the Allies advanced toward Germany more quickly than anticipated, facing several military logistics issues:

- troops were fatigued by weeks of continuous combat
- supply lines were stretched extremely thin
- supplies were dangerously depleted.

General Eisenhower and his staff chose to hold the Ardennes region which was occupied by the U.S. First Army. The Allies chose to defend the Ardennes with as few troops as possible due to the favorable terrain (a densely wooded highland with deep river valleys and a rather thin road network) and limited Allied operational objectives in the area.

Allied intelligence indicated that the Wehrmacht was using the area across the German border as a rest-and-refit area for its troops. The Allies found a peaceful part of the forest to place exhausted veteran and newly arrived units.

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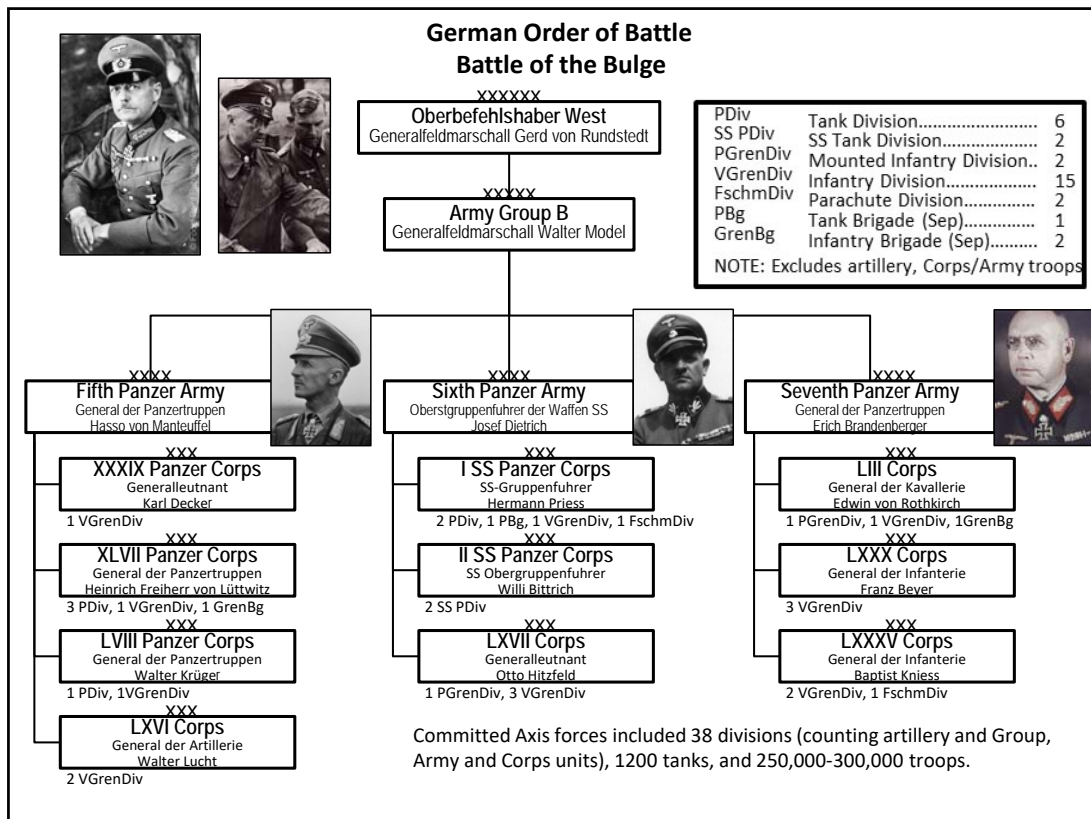
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## Unternehmen Wacht am Rhein



**✓ Disrupt Allied advance to Germany in the west and Soviet advance toward Germany in the east.**

**✓ Break the Allied lines at the Ardennes Forest (*à la* 1918, 1940).**

**✓ Split the U.S. Twelfth Army Group (Bradley) and the British Twenty-first Army Group (Montgomery).**

**✓ Capture the Belgian port of Antwerp.**

**✓ Cause heavy casualties, disrupt Allied communication lines and transportation centres including Liege and Antwerp.**

**✓ Split American and British and hope to negotiate a truce so that the Axis armies can focus on the Soviet Union.**

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**Oberbefehlshaber West**  
 Az. 73 i 00.14 Wa J Rü (W.u.G.2 VIIc)  
 Nr. 27446/40 g II. Ang.

Berlin W 35, den 16.12.44.  
 Tirpitzufer 72-76  
 Fernsprecher: Ortsvorwahl 31 0012  
 Fernvorwahl 31 0016

Tägliche Ankündigung

Geheim!

1. Dies ist ein Staatsgeheimnis im Sinne des § 88 R. St. G. B.
2. Weitergabe an Unbefugte, bei Postbefreiung als „Erlaubt“ zu bezeichnen.
3. Aufhebung unter Verantwortung des Empfängers durch gezielte Vernichtung.

Eingegangen  
16. DEC 1944  
Erlaubt

G J Nr. 7/194

Soldiers of the West Front! Your great hour has arrived. Large attacking armies have started against the Anglo-Americans. I do not have to tell you anything more than that. You feel it yourselves: **WE GAMBLE EVERYTHING!** You carry with you the holy obligation to give everything to achieve things beyond human possibilities for our Fatherland and our Fuehrer!

Im Auftrage  
Korn.

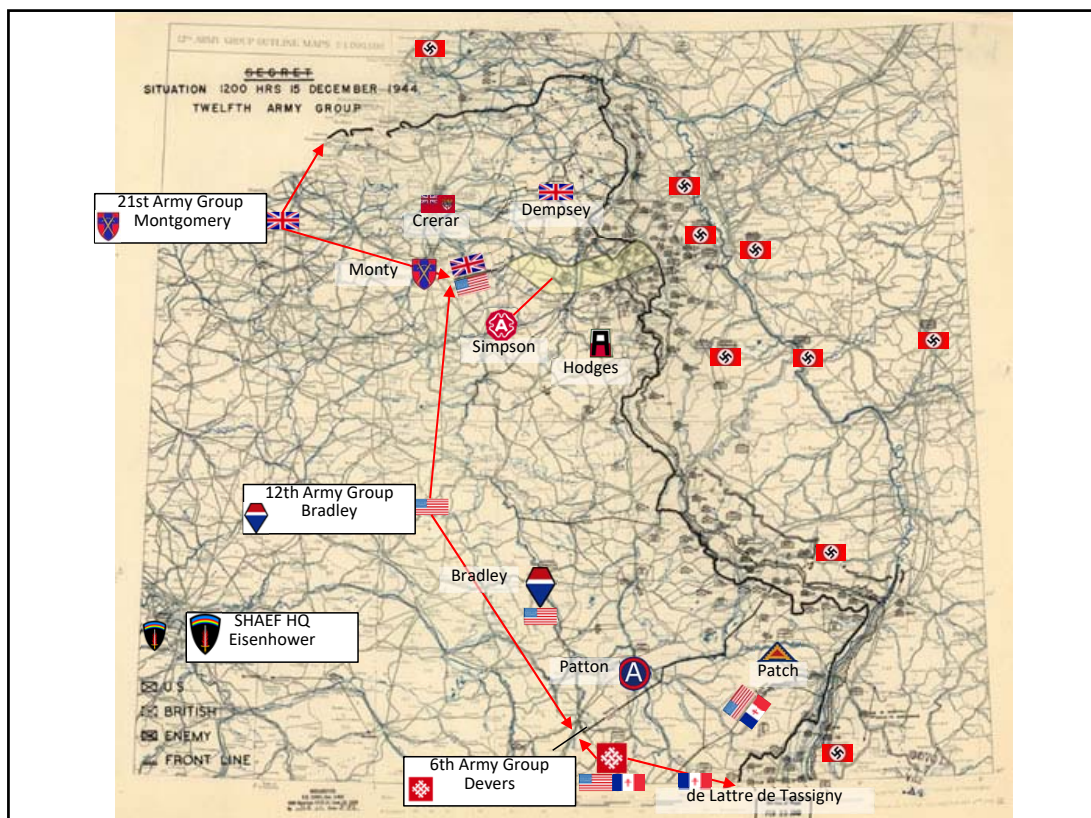
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## German deception operations

- The operation name, **Watch on the Rhine**, was a diversion.
  - Troop movement and preparations were disguised (e.g., movement at night, Axis planes flew over to mask noise, etc.).
  - Germans communicated by landline or courier, not radio (Ultra).
  - Germans ordered to prepare for Allied invasion in Cologne and Bonn.
  - Selection of “impassable” Ardennes Forest for attack (re 1940 attack).
  - Attack using weather (snow, fog) to keep Allied air grounded.
- **Operation Greif** (Griffin): English-speaking Germans disguised as Yanks spread confusion and terror by sabotage (e.g., cut phone lines, switch road signs), capture and use US tanks, act as MPs, etc.
- **Operation Strösser**: *Kampfgruppe* von der Heydte would drop by parachute behind Allied lines on December 17 to capture a road near Malmedy.
- **Operation Währung** (currency): German agents in American uniforms would use an existing Nazi intelligence network to bribe rail and port workers to disrupt Allied supply operations.

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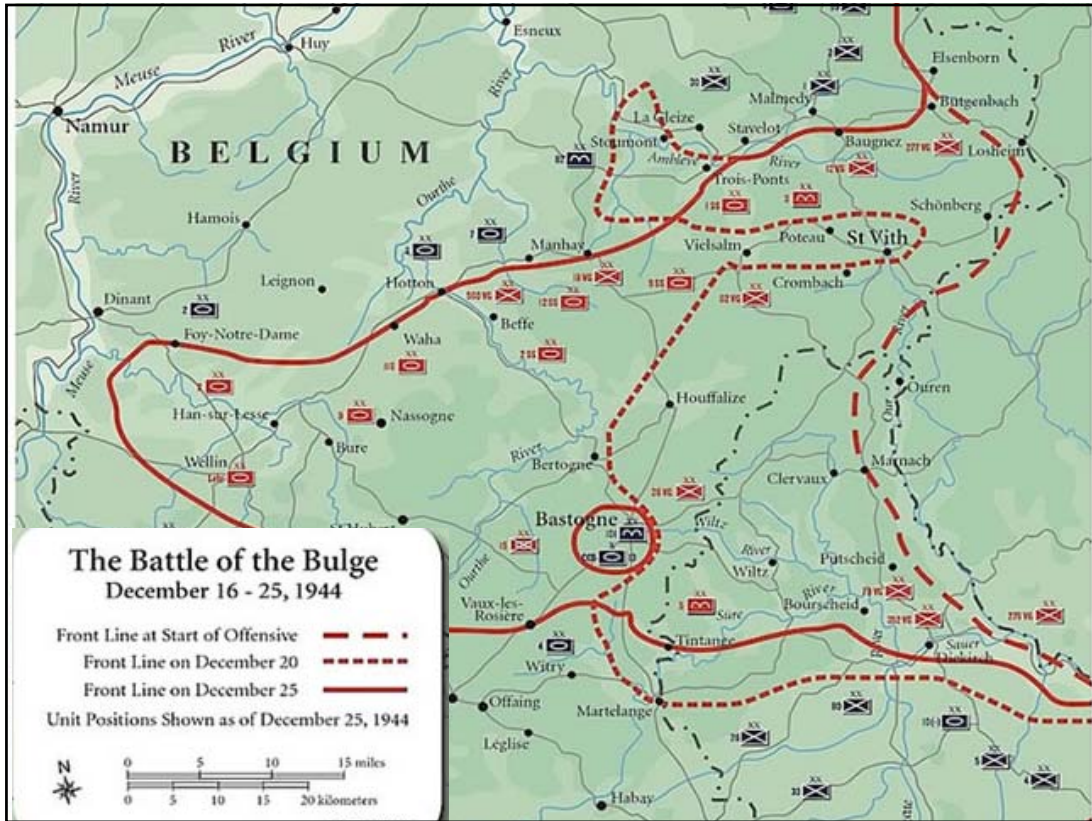




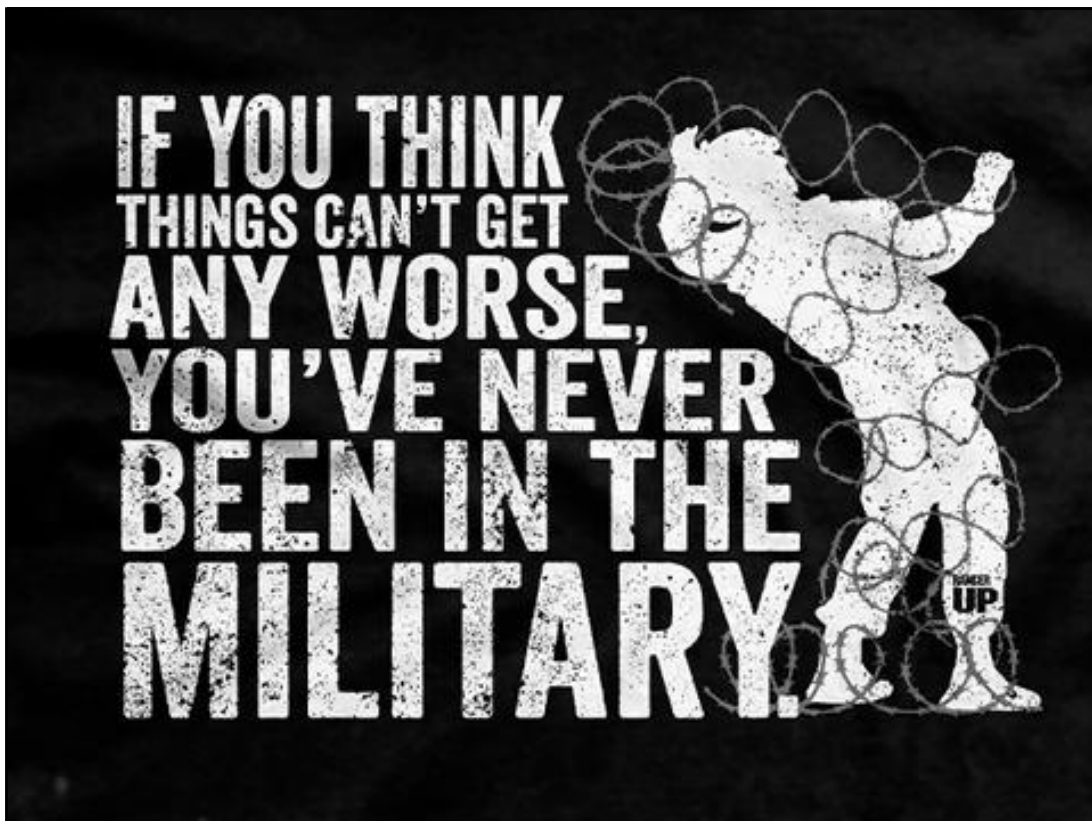
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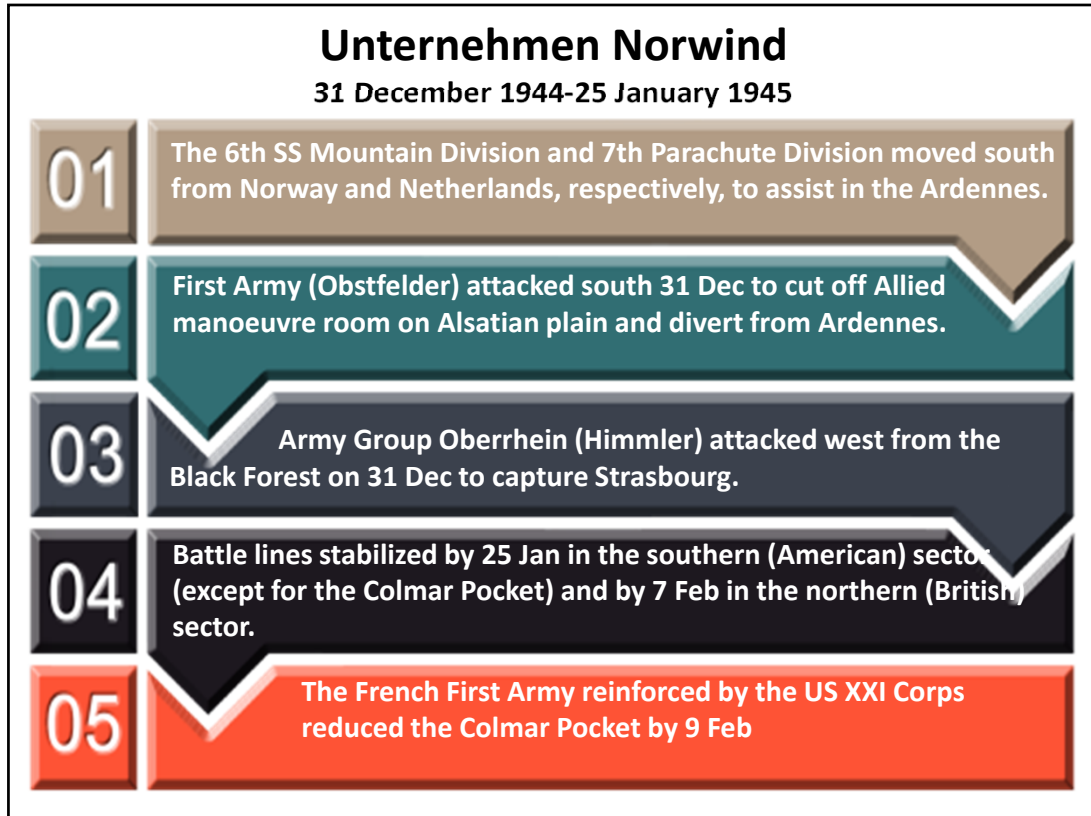
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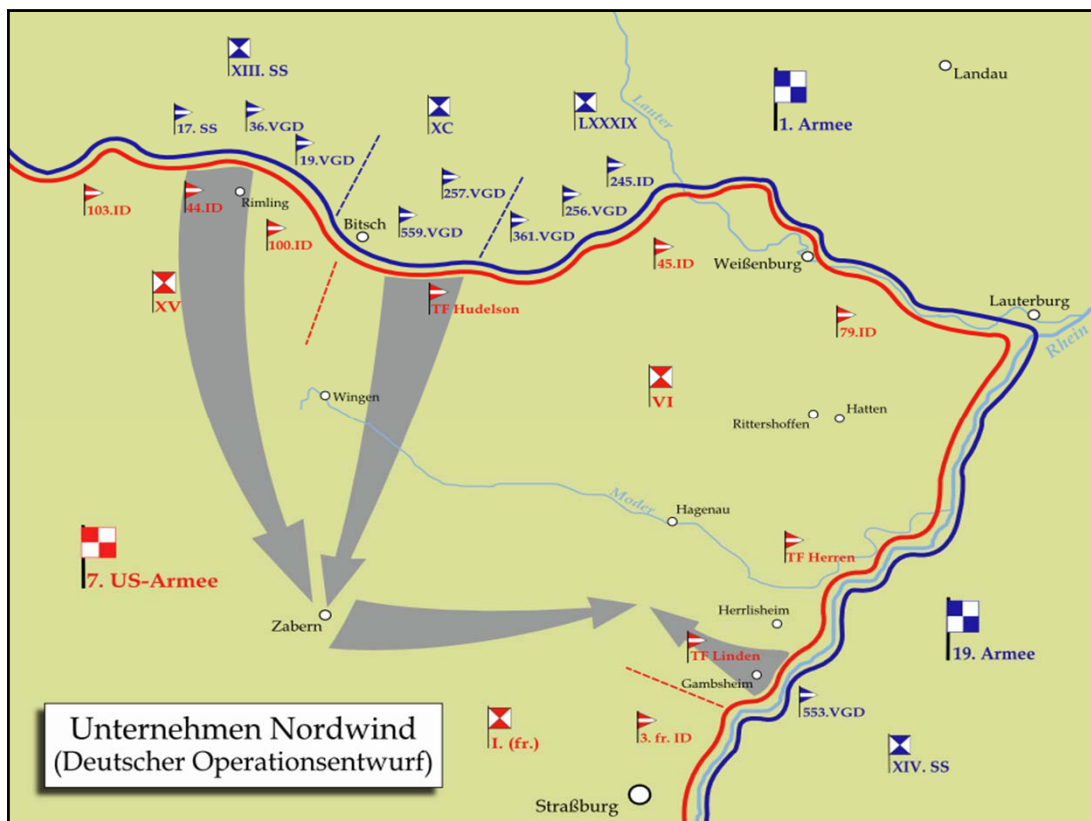
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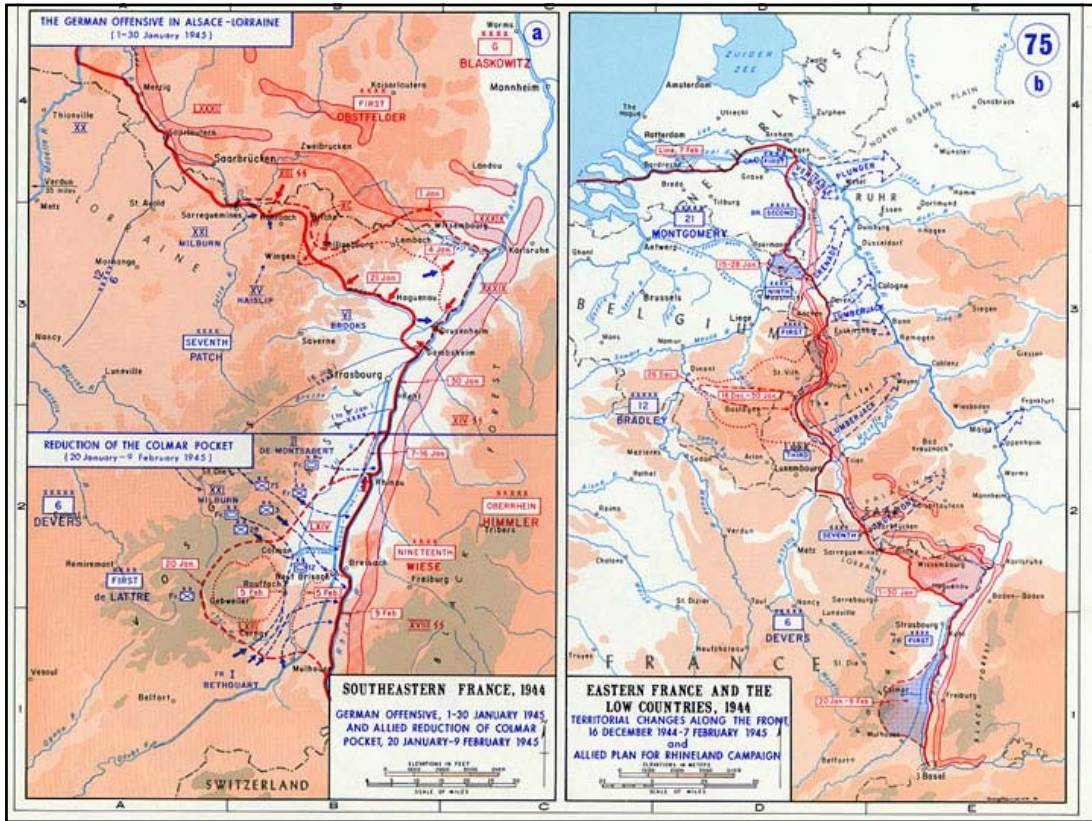
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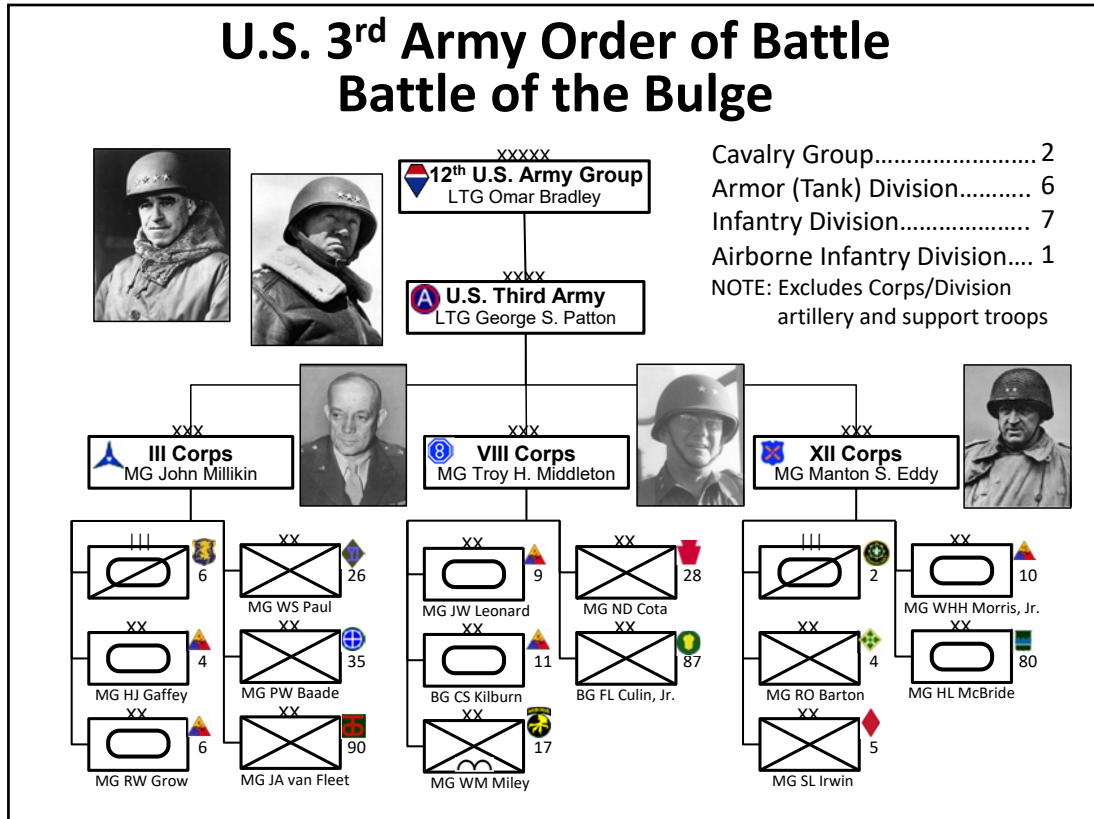
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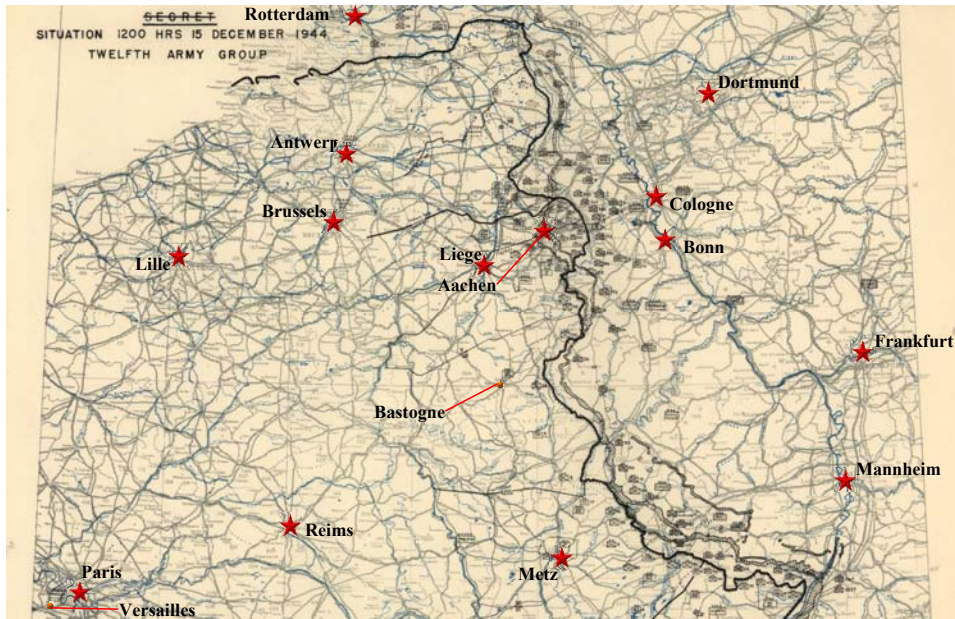
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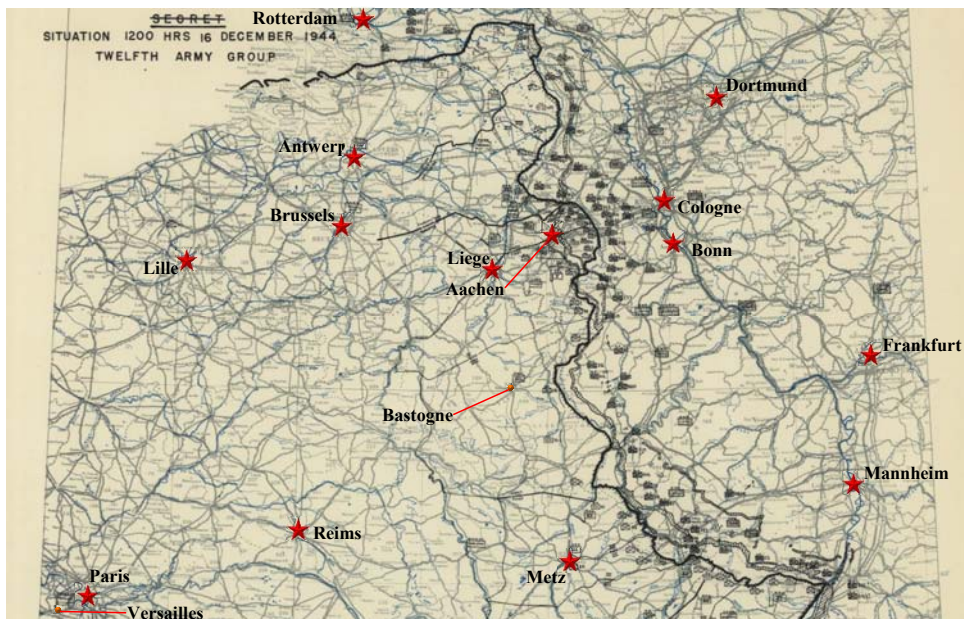


## 15 Dec 1944 - All quiet on the Western Front



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## 16 Dec – Germans launch Wacht am Rhein



A German officer carrying several copies of Operation Greif was taken prisoner and the plan was revealed.

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17 Dec 1944

- 150 prisoners of war of US 285th Field Artillery Observation Battalion were massacred by Waffen-SS forces at Malmédy, Belgium. Only 43 survived.



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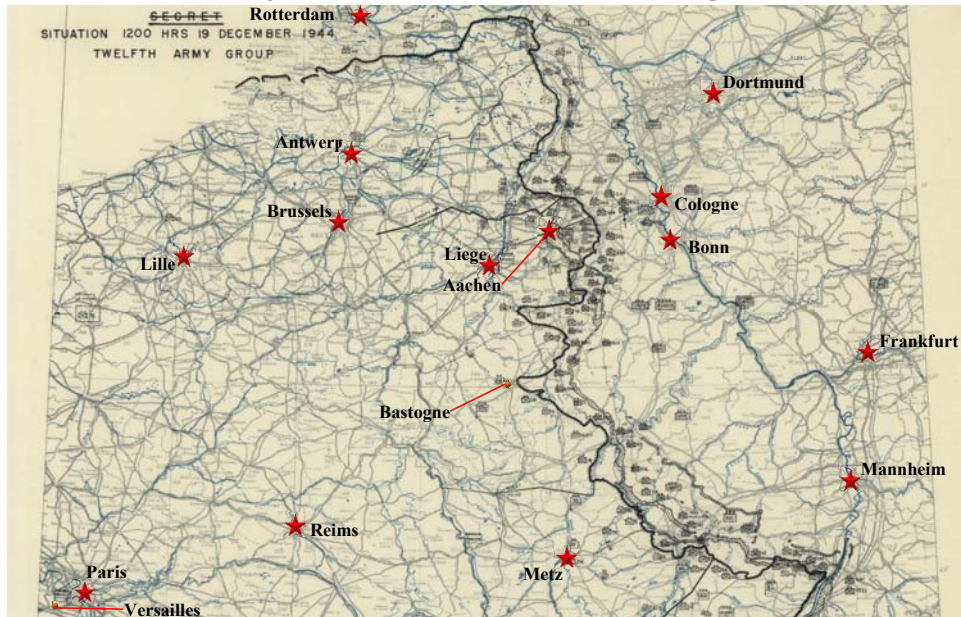
18 Dec 1944

- The German offensive in the Ardennes Forest in Belgium began to stall after Americans began to fight back.



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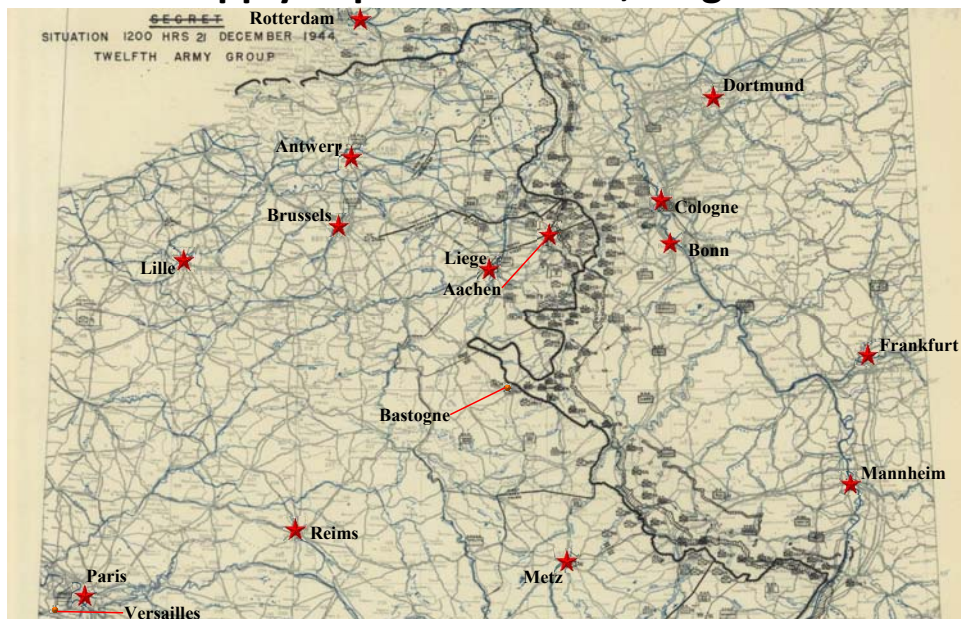
## 19 Dec - Germans capture 9,000 surrounded US troops in the Schnee Eifel region



Against staff advice, Eisenhower commits Allied reserve (US 101st Airborne) and 10th Armored Divisions of the US Third Army to Bastogne to hold the vital road junction.

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## 20 Dec – Elements of 6 Pzr Armee captured US fuel supply depot in Stavelot, Belgium



21 Dec – US forces recapture Stavelot, Belgium, while the Germans surround Bastogne and capture St. Vith

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## 22 Dec - Bastogne

To the U.S.A. Commander of the encircled town of Bastogne.


The fortune of war is changing. This time the U.S.A. forces in and near Bastogne have been encircled by strong German armored units. More German armored units have crossed the river Ourthe near Ortheuville, have taken Marche and reached St. Hubert by passing through Hompre-Sibret-Tillet. Libramont is in German hands.

There is only one possibility to save the encircled U.S.A. troops from total annihilation: that is the honorable surrender of the encircled town. In order to think it over a term of two hours will be granted beginning with the presentation of this note.

If this proposal should be rejected one German Artillery Corps and six heavy A. A. Battalions are ready to annihilate the U.S.A. troops in and near Bastogne. The order for firing will be given immediately after this two hours' term.

All the serious civilian losses caused by this artillery fire would not correspond with the well known American humanity.

The German Commander.



HEADQUARTERS 101ST AIRBORNE DIVISION  
Office of the Division Commander  
24 December 1944

What's sorry about all this, you ask? We're fighting - it's cold we aren't home. All true but what's the proud Eagle Division accomplished with its worthy comrades the 10th Armored Division, the 703rd Tom Battalion and all the rest? Just this: We've stopped cold as anything that has been thrown at us from the North, East, South and West. We have identifications from four German Panzer Divisions, two German Infantry Divisions and one German Parachute Division. These units, spearheading the last desperate German surge, were headed straight west for the bridge when the Eagle Division was hurriedly ordered to check the advance. And effectively this was done. Will be written in history, not alone in our Division's glorious history but in World history. The Germans actually did surround us, their radios blared our code. Their Commander demanded our surrender in the following impudent arrogance:

December 22nd 1944

"To the U. S. A. Commander of the encircled town of Bastogne.

The fortune of war is changing. This time the U. S. A. forces in and near Bastogne have been encircled by strong German armored units. More German armored units have crossed the river Ourthe near Ortheuville, have taken Marche and reached St. Hubert by passing through Hompre-Sibret-Tillet. Libramont is in German hands.

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All the serious civilian losses caused by this artillery fire would not correspond with the well known American humanity.

The German Commander"

The German Commander received the following reply:

22 December 1944

"To the German Commander:

**N U T S !**

The American Commander"

Allied troops are counter-attacking in force. We continue to hold Bastogne. By holding Bastogne we assure the success of the Allied Forces. We know that our Division Commander, General Taylor, will say: "Well done!" We are giving our country and our loved ones at home a better Christmas present and being privileged to take part in this greatest feat of arms are truly making for ourselves a Merry Christmas.

/s/ A. C. McULIFFE  
McULIFFE  
Commanding.

December 22, 1944

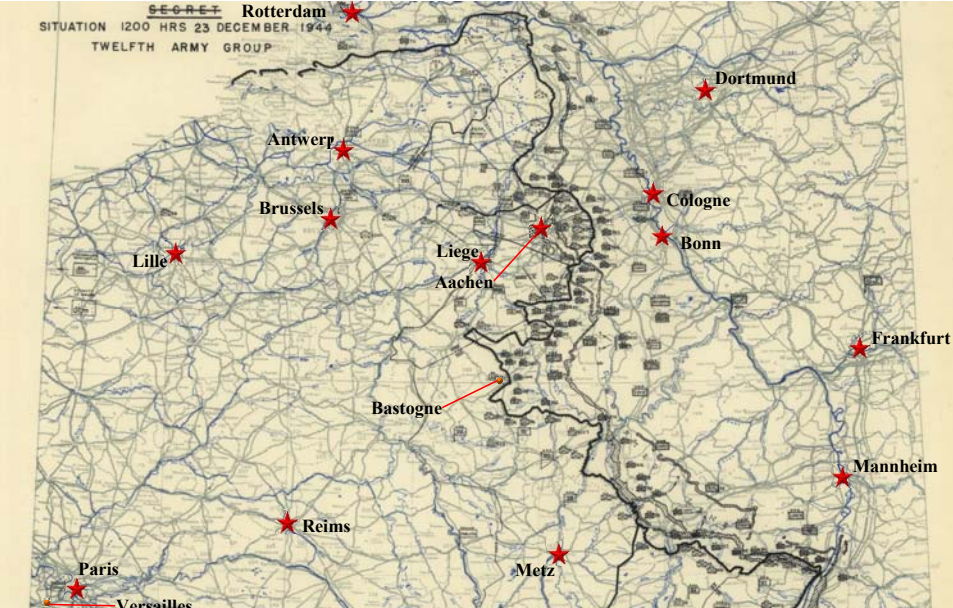
To the German Commander,

**N U T S !**

The American Commander"

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## 22-23 Dec - In Germany, von Rundstedt suggested a tactical withdrawal; denied by Hitler.



SECRET  
SITUATION 1200 HRS 23 DECEMBER 1944  
TWELFTH ARMY GROUP

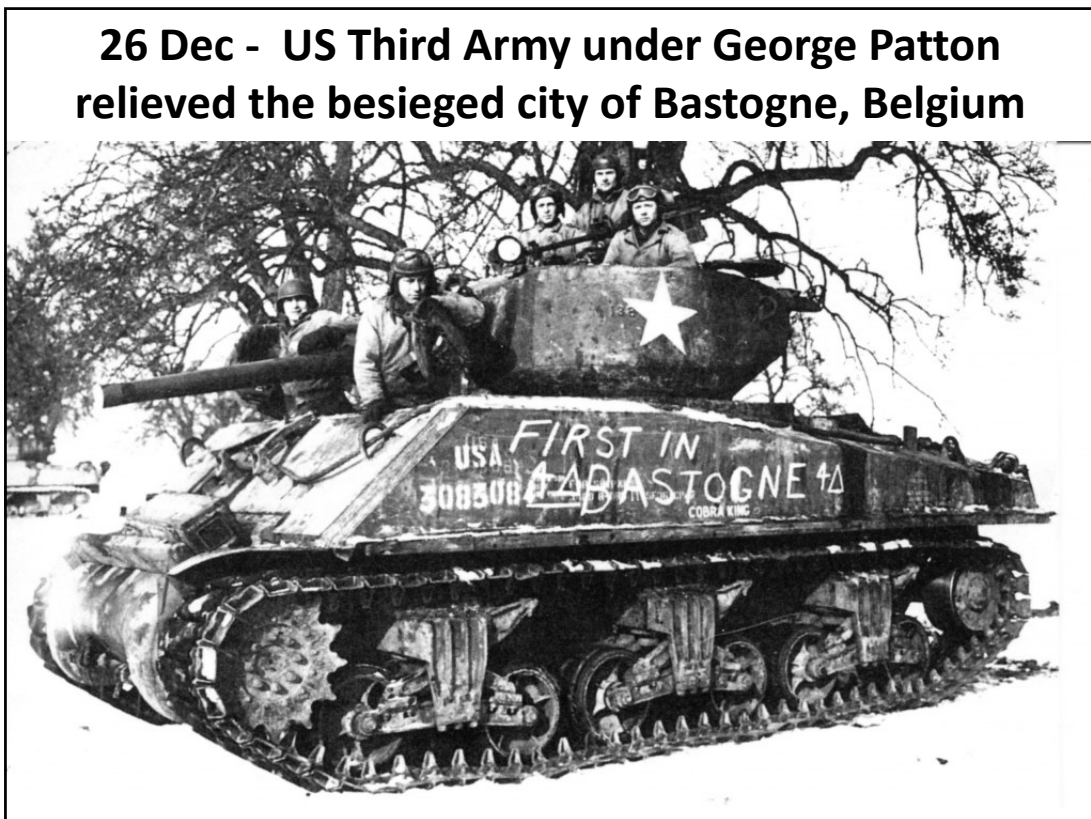
Patton shifted the US Third Army's axis of advance to send an Armor Corps (3 divisions) to relieve Bastogne.

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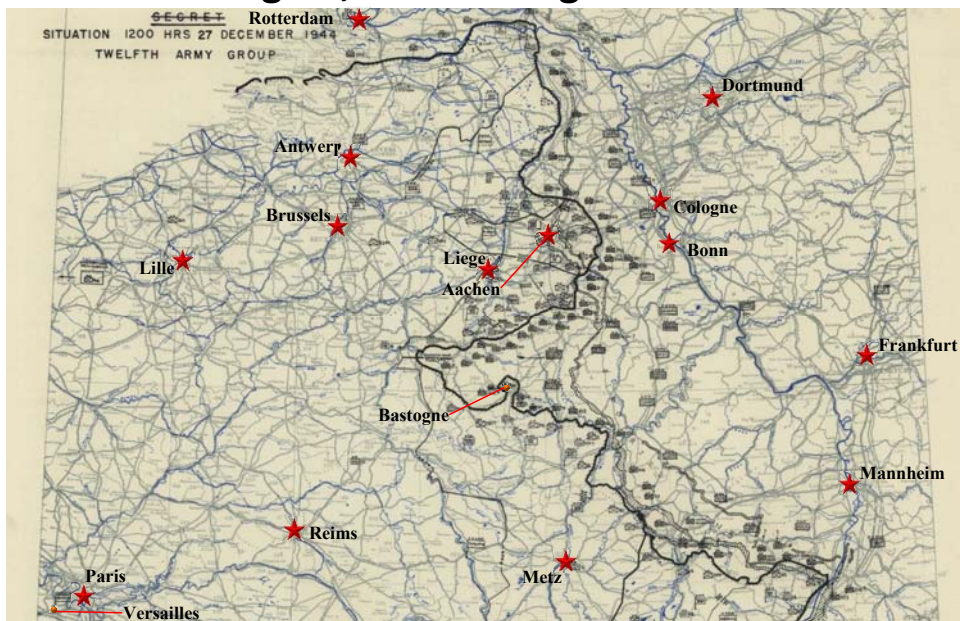


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**27 Dec - US troops began pushing German troops back in the Ardennes region, thus ending the German offensive.**

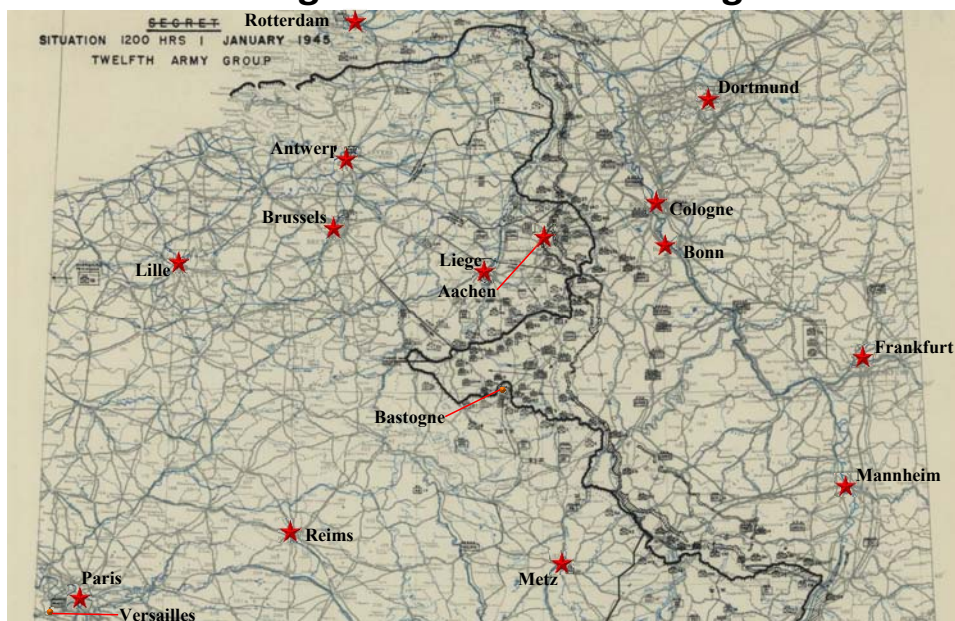


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- **28 Dec 1944** American counteroffensive began gaining ground. Adolf Hitler ordered renewed offensives in Alsace and Ardennes regions against the advice of his generals.
- **30 Dec 1944** Germans again attacked in the Bastogne corridor in Belgium. Meanwhile, British troops attacked Houffalize, Belgium, but they were stopped by fierce German defense.
- **31 Dec 1944** US troops re-captured Rochefort, Belgium, while the US Third Army began an offensive from Bastogne.

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### 1 Jan - Germans withdrew from the Ardennes Forest in the Belgian-German border region



**1 Jan - US troops massacre 30 SS prisoners at Chenogne, Belgium in retaliation for the Malmedy massacre.**

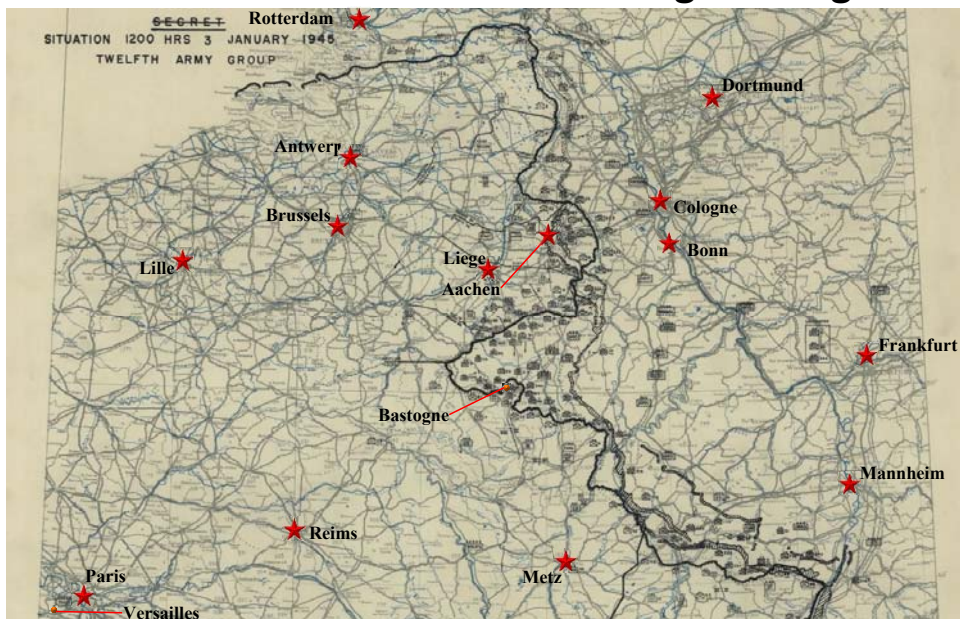
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**1 Jan - Luftwaffe launched Unternehmen Bodenplatte, (Basaeplate) as 800 aircraft conduct low-level strikes against Allied airfields in the Netherlands and Belgium. They destroyed 220 aircraft, most on the ground, but lost 188 aircraft and many experienced pilots who could not be replaced. This operation failed wipe out Allied air power based in the region.**



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**3 Jan - US First Army launched an attack on the northern flank of the Ardennes bulge in Belgium.**



**1,100 Allied bombers, escorted by 11 fighter groups, bomb railroad and communications centers in western Germany.**

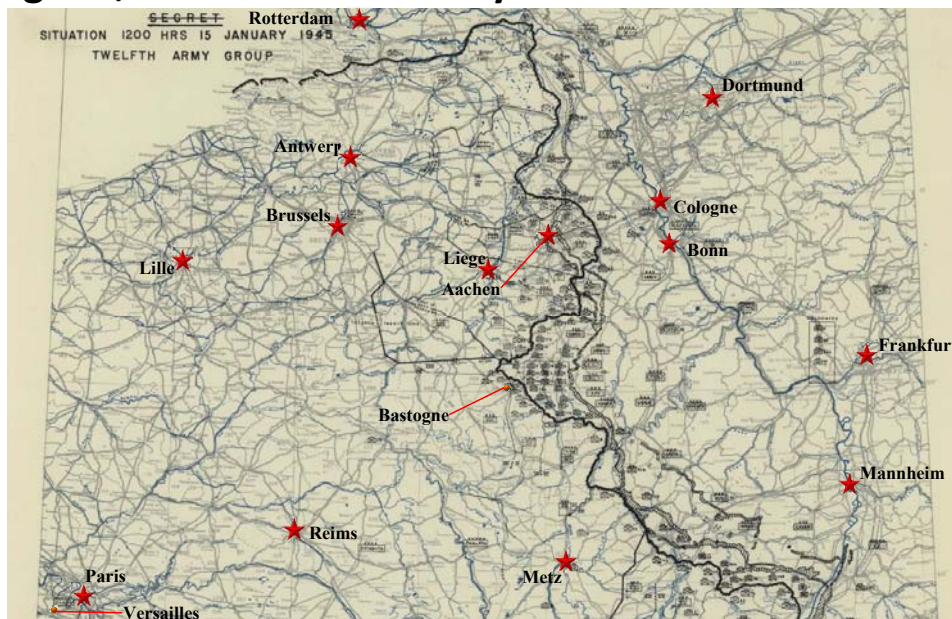
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- **5 Jan 1945** The German attack on Bastogne, Belgium was called off.
- **9 Jan 1945** US Third Army attack towards Houffalize, Belgium, on the southern flank of the bulge.
- **11 Jan 1945** British forces capture La Roche-en-Ardenne, Belgium, northwest of Bastogne.
- **12 Jan 1945** The Operation Nordwind offensive into France was finally stopped just 13 miles from Strasbourg. In Belgium, north of Bastogne, US and British forces linked up near La Roche-en-Ardenne.
- **13 Jan 1945** US First Army attack near Stavelot and Malmédy in Belgium.

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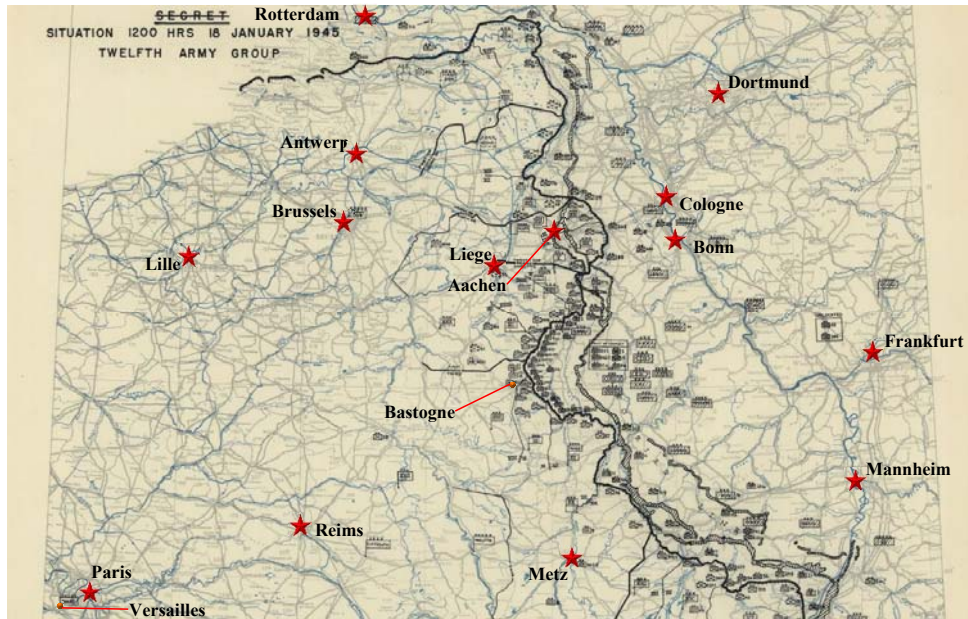
**US First and Third Armies linked up near Houffalize, Belgium; British Second Army attacked near Maas River.**



Germans were pushed back to the line prior to the launch of their Offensive.

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**18-28 Jan - The Ardennes bulge resumed its original lines.**

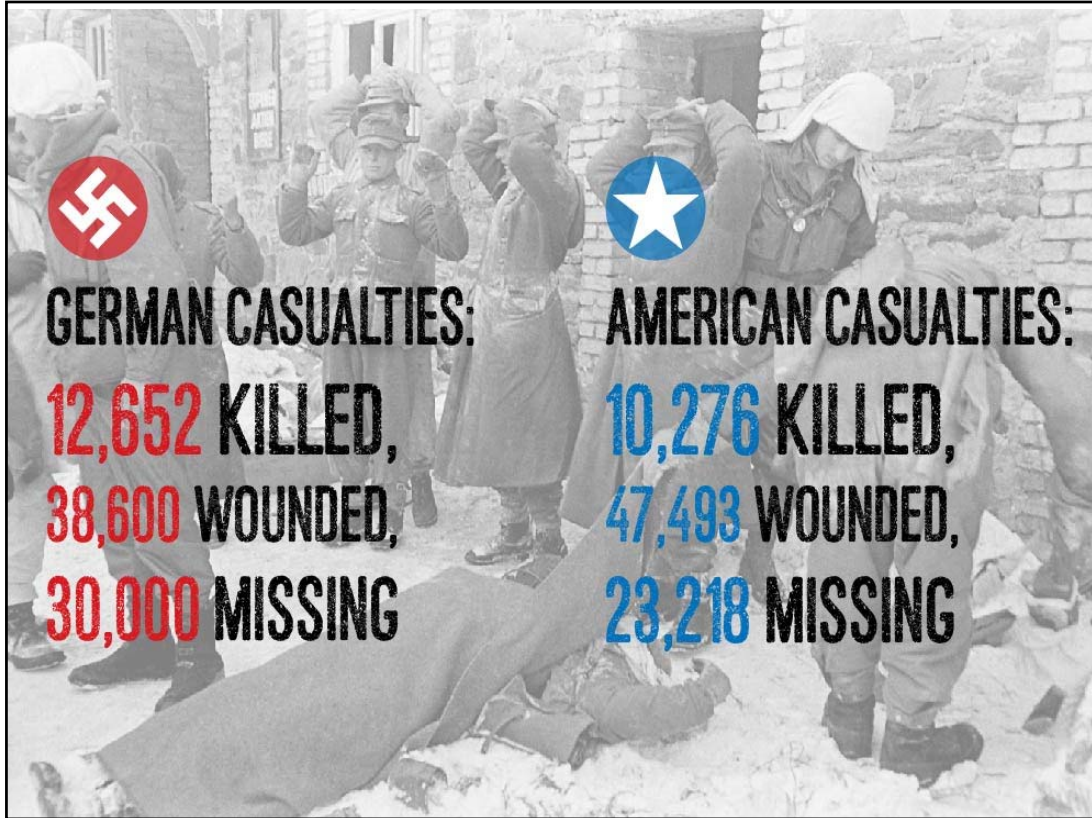


The Battle of the Bulge was over.

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 EVE OF BATTLE:	 EVE OF BATTLE:
<b>OVER 200,000 GERMAN TROOPS</b> (FOLLOWED BY ABOUT 100,000 REINFORCEMENTS);	<b>AROUND 83,000 AMERICAN TROOPS</b> (RISING TO 610,000 OVER THE COURSE OF BATTLE);
<b>400 TANKS;</b>	<b>242 SHERMAN TANKS;</b>
<b>1,900 GUNS</b>	<b>182 TANK DESTROYERS;</b>
	<b>394 PIECES OF ARTILLERY</b>
<b>(AMERICAN ARTILLERY SHOT ONLY 2,500 TOTAL ROUNDS ON 16 DECEMBER)</b>	

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