

## Abstract

The prestige of German technology and engineering remained high during the years of instability following World War I and prospered under the Weimar Republic. German science made leaps and bounds towards futuristic technologies during these years, including the rocket that came from science fiction novels written by Hermann Oberth. The enthusiasm for futuristic technologies drove people like Wernher von Braun to research and develop rockets with fellow enthusiasts in the form of amateur rocket groups. The rise of the Nazi party to power brought with it the policy of rearming Germany as soon as possible. Army Ordnance looked at these new technologies in order to replace weapons banned by the Treaty of Versailles. Karl Becker of Army Ordnance gave von Braun a small amount of money during the Weimar period to develop rocket technology. When the Nazis came to power, the funds poured in as the different rocket groups were consolidated into a single group at Kummersdorf and eventually Peenemünde. World War II provided an opportunity for the technology to be deployed. The struggles of priority and technical issues slowed the program down from their anticipated deployment in 1941 to 1943, which was pushed back to 1944 due to the bombing of Peenemünde in August 1943. The delays and bombing of Peenemünde brought the rocket program closer to the SS, which strove to gain control over the program. The SS brought to life the horrors of the underground Mittelwerk factory, where slave labor built rockets for the program, horrors that certain people needed to answer for in the post-war period. May 2, 1945, is the critical date when the rocket team surrendered to the American Army. The U.S. intelligence service had been searching for them throughout Germany. The U.S. Army, with the support of the State Department, brought these German rocketeers to the United States as part of the controversial Operation Paperclip, where they became a permanent icon in the American Military-Industrial-Complex, but with a shadow over their pasts. The Germans slowly became involved in the research and development phase of rockets. By the 1950s the group was developing new missiles, which allowed the United States to launch its first satellite, Explorer I on a Jupiter Missile created by von Braun's group. The American space program would not have had the success that it did without the help of these Germans.

## WAR, CONTROVERSY, SPACE

### The Story of Rocket Development from 1920s Germany to 1960s America



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## VON BRAUN'S ROCKET DEVELOPMENT



### **The A4/V2**

World's first ballistic missile  
origins - Nazi Germany  
1944-1945

### **Hermes II**

American A-4/V-2 rocket study of future  
missile capabilities  
1945-1953

### **The Redstone Rocket**

First Missile with the capability to carry a  
nuclear warhead  
Origins- Huntsville, Alabama  
1952-1964

### **Jupiter Class**

America First IRBM  
Missile that carried a US satellite into  
Space  
1957-1961

## World War II

The program achieved top-priority at the beginning of the war, was reduced due to the short term thinking of the military, but after Stalingrad in early 1943 the program again received top priority.

The A-4/V-2 was expected to be ready by 1941, but in fact was not deployed until 1944 against England due to the bombing of Peenemünde in August 1943 during Operation Crossbow and technical challenges that had to be overcome.

After the Bombing of Peenemünde of August 1943 the SS took over control of the program to the notorious Mittelwerk Factory which his part of the Nordhausen Concentration camp factory

The weapon was not effective in destroying British morale, but the technology was seen in combination with the Americans' new development — the atomic bomb — as a weapon of the future. From 1945 onwards the American Army went on a massive search to locate the production facilities and brains behind the weapon.

The Rocket Team surrendered on May 2, 1945



### Questions about guilt and responsibility

American military personnel white-washed the past involvement of the German rocket team due to the rising tensions with the Soviet Union.

Wernher von Braun had his SS past hidden as an outcome of Walter Jessel's investigations

Rudolph also had his involvement in war crimes concealed until the 1980's, when the truth came out that he had been involved in choosing the concentration camp and using forced labors at the factory

## TIMELINE OF EVENT



**The Weimar Republic:** The fascination with space flight began through Hermann Oberth's writings. The premier of the film *Woman in the Moon* in 1929 represents the height of space enthusiasm.

Wernher von Braun became involved with the "Spaceflight Society," an amateur rocket group. The rocket began to be militarized as a weapon when Army Ordinance became involved through Colonel Becker

**The Nazi period:** The Nazis' rearmament program served as a major opportunity for the rocket group, now led by von Braun with state sanctioned and funded research and development. The first location was Kummersdorf, outside of Berlin, but because of security issues the need for a larger facility became pressing. This place was Peenemünde

### Peenemünde Army Research Center for Rocketry

Location of the research and development facility of the German Rocketeers.

Founded 1937 and built with a cost of 180 million marks.

Massive importance of secrecy due to the nature of the A-4/V-2 rocket, which was to serve as a shock and destruct weapon.

**Post war Period:** The American military transferred German scientists to the United States via Operation Paperclip. The German rocket team went to Fort Bliss, Texas. During this period they learned what it means to be an American and began to work with General Electric on the Hermes project. Paperclip was disbanded in 1947 once news of the very controversial operation was revealed to the American public.

**Huntsville Year:** The Rocket Team moved to Huntsville after growing concerns about the Soviet development of rocketry. The National Security Council report on the Cold War and the American involvement in the Korean war were reasons for the group to build the Redstone rocket, the first surface to surface nuclear missile. Huntsville was where von Braun built the Jupiter class of missiles, which became the first American IRBM (intermediate range ballistic missile) capable of carrying a nuclear warhead.

During this period von Braun also began selling spaceflight to the American people after failing to convince the officials in Washington. He used the resources of Disney and Collier to get his message of spaceflight to the American people

**Space Race:** von Braun's main goal throughout the rocket development was to get into space. The Soviet success in the launching the first satellite, Sputnik I, meant that the Americans also needed to put a satellite in space. The Americans had devoted a good amount of resources to bringing over the German rocket group. After the United States placed Explorer I into orbit in January 1957, von Braun's team was transferred from the control of the Army to the newly-formed NASA.