



Official photograph of Dr. Eberhard Rees as Director of Marshall Space Flight Center.

FROM V-2 TO SATURN V

The Story of Dr. Eberhard Rees

by Robert Jaques

The United States could not have placed men on the moon in 1969 without the expertise of the German scientists who developed the deadly V-2 rocket for Hitler during WWII. After the war ended, a large group of rocket experts migrated to America to continue their research and development in rocketry.

One of these scientists is the brilliant engineer, Dr. Eberhard Rees. He was educated during the early 1930s when the world was trying to recover from the shock of economic depression. Germany's economy was faltering and jobs were scarce. The country was rallying behind a dynamic orator named Adolf Hitler, who promised jobs and prosperity. During the difficult depression years, Rees worked very hard at his studies at the Institute of Technology at Stuttgart. After earning his degree in mechanical engineering, he continued his education at the Institute of Technology at Dresden. He graduated in 1935, and soon encountered the difficulty in finding a job. After several months, he was hired by a steel mill in Leipzig.

At the steel mill Rees supervised the construction of a large plant addition and planned the production line. He became very adept at completing his assignments on time

and within his allotted budget.

Rees had worked at the mill for almost four years when he was enticed into joining a scientific mapping expedition traveling to Bulgaria. He was given a leave of absence by the company to join the mapping team. Rees was in Bulgaria mapping special areas when Germany invaded Poland on September 1, 1939. Rees and the mapping team returned to Germany upon the advice of the German Ambassador immediately after the war started. The expedition disbanded after arriving back in Germany, and the team members reverted to their previous jobs.

Back at the mill, Rees found a letter waiting for him from a former Dresden professor who was working at a test base near the Baltic Sea. The professor had a very interesting wartime assignment and he wanted Rees to join him as his assistant. Rees resigned from the steel mill and notified the professor that he would accept the offer. Rees recalled, "There was a high priority on that assignment and that's the way I got to Peenemunde. That was in February 1940."

The Peenemunde Test Center was a large scientific base under the direct control of the German Army. General Walter Dornberger was the officer in charge. He was known for

his remarkable ability to unite the efforts of civilian and military workers.

Rees first met and became acquainted with the director of the V-2 research team, Dr. Wernher von Braun, shortly after his arrival at Peenemunde. Dr. von Braun was impressed with Rees' engineering ability and organizational qualities. Rees became von Braun's deputy director and served as the technical plant manager of the German Guided Missile Center. He assumed complete authority over the rocket program during von Braun's absences.

Rees got caught up in the excitement and enthusiasm of rocketry soon after his association with Dr. von Braun. "I got into rocketry at Peenemunde, and not before," Rees recalled. "The design for the V-2 was already available in 1940. We called it the A-4. The name V-2 was coined by the Minister of Propaganda Goebbels in 1944 when it was officially introduced."

Even in the early development stages of the V-2, Rees and von Braun showed great interest in the possibilities of space travel. "We talked very often about the rocket as the only propulsion means to go into space. When the war was over, we would go away from the weapon business and go into space flight. We talked about that quite a bit. As a matter of fact, von Braun was actually 14 days in detention because he was accused of not being interested in the V-2, but rather only in rocketry for space flights," recalls Rees.

Delays often plagued the scientists working on the V-2. On August 17, 1943, Rees and seven other scientists met with General Dornberger in a private conference to discuss the delays. Rees disclaimed responsibility for the delays by blaming the lack of properly trained employees in the offices of planning and design. Rees and von Braun asked to resign from the V-2 project, but General Dornberger refused to accept their resignations. At this time of crisis in the project, Dornberger used all of his diplomatic skills to persuade them to stay and keep the rocket team intact. After listening to Dornberger, Rees and von Braun agreed to continue with the project.

The development of the V-2 included many trial launches that often ended in disaster. Some exploded on the pad and others exploded shortly after liftoff. By carefully studying films of each launch, the scientists were able to determine the reason for the failure and to make improvements for their next test flight. Dr. Rees made certain that suppliers and contractors manufactured the critical rocket parts to strict specifications.

In early 1944, the V-2 program began to achieve success. Top Nazi officials visited the secret test center for a firsthand review of the program and its impact on the war effort. Some of the Nazi officials that Dr. Rees met during his work at Peenemunde were Albert Speer, Hermann Goering, and Heinrich Himmler.

How did these men impress Dr. Rees? He remembered, "Speer was a very interesting man. He was broadminded and an excellent architect. He was caught up by the intriguing personality of Hitler.

"I met Goering once. He was one of the famous aces of WWI. Just a handshake . . . that's all."

Himmler wanted to put Peenemunde under the control of the SS, but he was unsuccessful due to the efforts of Speer and Dornberger. Of Himmler, Rees said, "I always had the feeling to be very, very careful around him. If you were in disgrace with Himmler, you could be wiped out right there for some reason. Himmler did not like von Braun."

The bugs were finally eliminated from the V-2 test flights and they became a deadly instrument of war. On September 8, 1944, the first V-2 was launched toward a target near Paris. Britain received over one thousand V-2 rockets between 1944 and early 1945. By the war's end, approximately 4300 V-2s had been operationally launched.

In the spring of 1945, the war was going against Germany, and the scientists at Peenemunde knew the advancing Allied troops would soon crush German resistance. Dr. von Braun, Dr. Rees and four close friends met in the parlor of a local hotel to discuss leaving Peenemunde and move to a region likely to be occupied by the American Army. The scientists believed the Americans would treat them better than the Russians, so they made plans to surrender to the rapidly advancing Americans.

After the war ended, Dr. von Braun, Dr. Rees and 116 original rocket team scientists from the Peenemunde Test Center came to the United States. They moved to Ft. Bliss, Texas, where they continued to perform rocket research on captured V-2s at the White Sands, New Mexico, Proving Ground. Dr. Rees and the other scientists worked under contract with the U.S. Army.

The scientists moved to Huntsville, Ala-

bama, in 1950, when the Army's rocketry projects were transferred to the Redstone Arsenal. In 1952, Dr. Rees returned to Germany to recruit more scientists and engineers to move to Huntsville and work for the Army's Ordinance Missile Laboratories. And in 1954, Dr. Rees became an American citizen.

From 1956 to 1960, Dr. Rees served as the Deputy Director of Development Operations of the U.S. Army Ballistic Missile Agency. He contributed heavily to the successful development of the Jupiter "C" rocket which placed the first American satellite *Explorer I* in orbit on January 31, 1958. He also worked on the development of the *Redstone* and *Pershing* missile systems.

In 1960, the Marshall Space Flight Center was established, and Dr. von Braun was



Dr. Rees with a model of the shuttle. (Author)



Autographed photo of Dr. Rees (left) talking with a scientist in the press room at Marshall Space Flight Center immediately following the launch of the first shuttle (STS-1). (Photo by Author)

appointed as the first director. Knowing the scientific expertise and manufacturing ability of Dr. Rees, von Braun asked him to be the Deputy Director for technical and scientific matters. The *Saturn* series rockets, the *Saturn I*, the *I-B*, and the *V*, were developed with Rees' technical guidance.

The *Saturn V* was heralded the world over when Neil Armstrong became the first man on the moon on July 20, 1969. One of man's greatest feats could not have happened without the tremendous power generated by the five engines of the *Saturn V*.

Reflecting over his career from the V-2 to the *Saturn V*, Dr. Rees said, "The most interesting to me was the *Saturn* series . . . the *I*, the *I-B*, and the *V*.

"I foresee no space flight in the future as we know it," he said, "but rather space travel. That means with as many as 20 . . . 40 . . . 60 flights of the shuttle per year. I see there a big field."

Does he feel man will visit the moon? "Oh, yeah. Will it be next year? I say no. If in the next 50 years, I would say quite a possibility. I believe we will finally make a station on the moon."

EPILOG

After Dr. von Braun retired from NASA in 1970, Dr. Rees succeeded him as the Director of Marshall Space Flight Center. He remained in that capacity until his own retirement in 1973.

Dr. Rees has received many professional awards and honors for his outstanding achievements in the field of rocketry. He has generously donated his personal

papers to the archives located within the Alabama Space and Rocket Center in Huntsville, Alabama. Researchers and scholars will one day have the opportunity to study the notes and documents that Dr. Rees accumulated during his career in rocketry.

BIBLIOGRAPHY

1. Personal interview, Dr. Eberhard Rees, May 21, 1981.
2. *Know Aviation* by Mason and Windrow, Doubleday and Co., Inc., Garden City, New York, 1973.
3. *The Rocket Team* by Frederick Ordway III and Mitchell Sharpe, Thomas Crowell Publishers, New York, 1979.
4. *Wernher von Braun* by Erik Bergaust, National Space Institute, Washington, D.C. 1976.
5. *V-2* by Walter Dornberger, Ballantine Books, New York, 1954.
6. Press release, Marshall Space Flight Center, Huntsville, Ala., 1972.



ABOUT THE AUTHOR

Bob (front seat) has been interested in aviation for over 20 years. He is an active private pilot, researches aviation history, and presents aviation-related programs to many schools in northern Alabama.

He is a member of the AAHS, Confederate Air Force, Aviation Hall of Fame, and German Fighter Pilot Association.



Front cover of magazine sent to former employees at Peenemunde. Translated, the cover reads: "The Rocket. Newsletter of the Common Interest Organization of Former Peenemunde Workers."

(Author's Collection)