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Last rocketeers set sights on Mars

By Kevin Maney, USA TODAY

HUNTSVILLE, Ala. — Four men and one woman, all around 90 years old, gather in a conference room and pour themselves coffee — rocket fuel for the last of the original rocketeers.



Konrad Dannenberg hopes private industry will take tourists to space.

By Patricia Miklik Doyle for USA TODAY

Just outside, in Rocket Park, looms some of their handiwork: Gemini and Mercury capsules, a lunar lander and a giganticrusting Saturn V from the Apollo program.

These five people were among 118 German rocket scientists bundled up and brought to the USA after World War II. Working for the Nazis, the rocket scientists had made Hitler's deadly V-2s. Reconstituted in Huntsville, the group vaulted U.S. rocket technology ahead by a decade and developed the rockets that allowed their adopted country to win the space race. (**Audio/video:** [They opened the gate to heaven](#))

The group's inspirational leader, Wernher von Braun, helped persuade President Kennedy to make his famous commitment to put a man on the moon by the end of the 1960s.

Today, only 12 of that group are still living, including the five gathered here recently to help raise money to restore the Saturn V outside. Even as the remaining rocketeers fade away, they are suddenly relevant again to a new generation.

For almost 30 years after Apollo, the American public seemed indifferent to space. But now, technology entrepreneurs — members of a generation raised on

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By Patricia Miklik Doyle for USA
TODAY

Ernst Stuhlinger was Werner von Braun's right-hand man.

Star Trek and *Star Wars* — are again making space sexy.

Microsoft billionaire Paul Allen funded SpaceShipOne, which this fall won the X Prize for boosting civilian space travel. Amazon.com founder Jeff Bezos has started a private company that will work toward putting people on Mars. Elon Musk, who founded online bill-paying service PayPal, has started a space company. Mogul Richard Branson is aiming to be the first to put hotels in space.

To this new generation, the German rocketeers are an inspiration. For the rocketeers, the techies are reviving their dearest hope: that man will go to Mars.

"If private industry takes tourists into space, it might uplift the whole program again," says Konrad Dannenberg, 92, a propulsion expert on Apollo. "I'm very hopeful."

Ernst Stuhlinger, 92, who was von Braun's right-hand man, twinkles when asked about the new generation's dreams of Mars flights. "We old-timers have been thinking that way for a very long time."

Forced to make missiles

The rocketeers have long been haunted by their earlier lives.

In the 1930s, Germany was a hotbed of research into the new idea of launching rockets into space. A young von Braun took the lead, launching his first rockets in 1934. As World War II approached, the Nazis created a rocket team under von Braun at a secret base on an island at Peenemunde, Germany. They were ordered to make military missiles, not spaceships.

Key space dates

1950: Wernher von Braun and his team of German rocket scientists begin work on U.S. Army Redstone rockets. In 1960, von Braun is named the first director of the Marshall Space Flight Center, which develops Saturn rockets designed to reach the moon.

Oct. 4, 1957: The Soviet Union launches Sputnik I, the first successfully launched satellite, fueling fear in the USA that it's falling behind in the "space race."

January 1958: The United States launches its first satellite, Explorer I.

May 5, 1961: Alan Shepard becomes the first American in space when he embarks on a 15-minute suborbital flight. Nine months later, John Glenn becomes the first American to orbit the Earth.

May 25, 1961: President Kennedy commits the United States to landing an astronaut on the moon before the end of the decade.

March 1965: Project Gemini is launched.

Jan. 27, 1967: Three astronauts

The team developed the V-2, which killed 2,500 British civilians. The rockets were built by concentration camp labor in tunnels.

The rocketeers have always said they had no choice. They say they wanted to build rockets to go to the moon and Mars, not to carry explosives. "We couldn't even talk about space flight," Dannenberg says. "Von Braun was at a party and talked about it with some people, and the Nazis found out and put him in jail." He was later released, but the message was clear.

As Germany's defeat seemed certain in 1945, the rocketeers made a calculated move. "It was clear nothing was going to happen in Germany in space after the war," Dannenberg says. If the rocketeers wanted to pursue their dream, they would have to go elsewhere. The group decided they'd have their best shot with the Americans.

They hid their research papers in a mine shaft, forged travel documents, and as many as 500 people — scientists and their families — moved toward the approaching American Army — avoiding the Gestapo, who might have arrested or shot them.

killed in Apollo capsule fire.

July 20, 1969: Neil Armstrong and Edwin "Buzz" Aldrin of the Apollo 11 mission become the first humans to walk on the moon.

April 13, 1970: The Apollo 13 spacecraft severely damaged in explosion on the way to the moon. Spacecraft is brought safely back to Earth.

May 14, 1973: The USA launches Skylab, the nation's first space station.

April 12, 1981: The first space shuttle, Columbia, lifts off from Kennedy Space Center.

Jan. 28, 1986: The space shuttle Challenger explodes seconds after lift-off, killing all seven aboard.

Nov. 7, 1996: The Mars Global Surveyor is launched. The craft enters Martian orbit in 1998 and has been mapping the planet ever since.

July 4, 1997: The Pathfinder spacecraft lands on Mars. The craft, with a miniature rover called Sojourner, explores the surface of the planet.

Oct. 30, 1998: At age 77, John Glenn returns to space aboard the shuttle Discovery.

December 1998: Construction begins on the International Space Station, a permanent orbiting science lab.

May 29, 1999: Discovery becomes the first shuttle to dock with the International Space Station when it delivers parts and supplies to the space station.

November 2000: An international crew begins living aboard the International Space Station.

Feb. 1, 2003: The shuttle Columbia explodes over Texas, killing all seven aboard.

Source: HistoryChannel.com

beating the Soviets to a manned space lab, but would have a "sporting chance" of beating them to an orbit of the moon and "an excellent chance" of beating them to a moon landing.

In other words, the USA didn't go to the moon because it was there. We went because we could get there first.

In a speech in May 1961 Kennedy laid out one of history's great mission statements: "This nation should commit itself to achieving the goal, before this decade is out, of landing a man on the moon and returning him safely to the Earth."

It could not happen without the German rocketeers.

"The irony is that in the 1960s, we went from nothing to landing a person on the moon in eight years," says space entrepreneur Musk. "Today it would take two or three times as long, and that's crazy."

They holed up in an abandoned fortress in the Alps.

Von Braun sent his younger brother, Magnus, off on a bicycle to try to find the Americans. He stumbled across Pvt. Fred Schniekert of Sheboygan, Wis., and tried to explain that a whole team of rocket scientists wanted to surrender. Schniekert said, "I think you're nuts," but relayed the message to his superiors, who recognized the value of the rocketeers.

The Army raced to Peenemunde to get there before the Soviets. The rocketeers' papers and every project and spare V-2 part were loaded on 300 rail cars that were shipped to the USA. And then the U.S. government took its own calculated risk: It transferred the 118 former enemy rocket scientists and their families to Fort Bliss, Texas, and eventually to an abandoned military base in Huntsville.

Beating Russia to the moon

Over the next decade, the rocketeers didn't have much to do. "We called ourselves PoPs — prisoners of peace," Stuhlinger quips. John F. Kennedy was elected president in 1960 and soon after fell from grace with the failed Bay of Pigs invasion of Cuba. A few years before, the USSR had beaten the USA to space with its Sputnik satellite.

"Kennedy wanted to do something to regain America's prestige," Stuhlinger recalls. Kennedy asked Vice President Lyndon Johnson to write letters seeking advice. One went to von Braun.

Stuhlinger has copies of memos that bounced between von Braun and the White House. Von Braun laid out everything he knew about the capabilities of U.S. and Soviet rockets. He concluded that the USA would have little chance of

Astronaut Walter Schirra, 81, who flew three space missions, was one of the seven original Mercury astronauts when he heard about Kennedy's speech. "I couldn't believe we'd made that commitment," he recalls. "So many things happened so fast. I'd just flown Mach 2 for the first time in 1958." To get to the moon would require speeds of Mach 25, which would take engines 60 to 70 times more powerful. "That's a big leap."

The von Braun team numbered 400 in 1961. It quickly swelled to 8,000. But the Germans were the leaders, and von Braun was the star. "That was important," Stuhlinger says. "We had a von Braun. There is no von Braun today."

"If the Germans had not been here, the technology would've been delayed by 10 years, 15 years," says Mark Smith, who knows the Germans from his years as CEO of Adtran, a Huntsville tech company. "No group of people is indispensable, but they shrunk the time frame."

Rules about federal contracts and processes were tossed. "We could make decisions in almost no time," says Walter Haussermann, who led development of guidance controls. He remembers talking with IBM about supplying the mission's computers. He was able to say yes in two days. "Today, it would take years," he says.

Thanks to the Germans' experience, glitches rarely slowed the project. The only disaster: a fire in the Apollo 1 that killed the three-man crew. Manned flights were delayed for nearly two years to make sure it didn't happen again.

Ask the Germans how they accomplished so much so quickly, and they struggle for an answer. They note the commitment from Kennedy, the military and the American public — all pulling toward a single goal. Schirra, who often worked closely with the Germans, says the space race was like a years-long adrenaline rush. "It was a competition with Russia, and we had to beat them," he says.

Mostly, though, the Germans seem nonchalant, as if it were easy to put a man on the moon in eight years. "We all believed it could be done," Dannenberg says with a shrug.

New generation takes over

So now comes a new age.

Interest in space dropped after the first moon landings. Travel to Mars seemed unlikely. Discouraged, the Germans dropped out of NASA. Von Braun died in 1977.

But a young generation at NASA has put two robot rovers on Mars and wowed the public. President Bush has talked of Mars missions. Mostly, though, entrepreneurs have picked up where the rocketeers left off.

"We need to exceed where we were with the Apollo program," says Musk, whose company, SpaceX, plans its first orbital launch next year. "We have to go to Mars with people. A lot of people take for granted that that's the direction we're heading in, but unless there's a dramatic reduction in cost, there won't be anything like that. Somebody has to try to step in and try to save the day."

Musk made a fortune from PayPal, which he sold to eBay for \$1.5 billion. He's pumping much of it into SpaceX. He also helped fund the X Prize.

The public might be ready for Apollo-like excitement again. SpaceShipOne is on the cover of *Time* as 2004's most amazing invention. The cover of the December issue of *Wired* proclaims "The New Age of Exploration." Bezos' secretive space start-up, Blue

Origins, says on its Web site that it's "developing vehicles and technologies that, over time, will help enable an enduring human presence in space."

To do so is the enduring last wish of the rocketeers.

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