

Air and Space this Week

Item of the Week

Operation Paperclip

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This week marks the 75th anniversary of the arrival in the USA of rocket scientists, engineers, and other specialists captured in Germany at/near the end of WWII. Many were brought to the US to work in a variety of important capacities at the end of the War and after. But some had been ardent Nazis, and many had been of great importance to the Axis war effort, and their presence was deeply resented by many, and they were held with great suspicion.

Hitler had initially been very distrustful of academic-types in general, before and during the first few years of WWII combat, and many found themselves in routine military jobs that did not utilize their special skills. Reverses on the Eastern Front, however, spotlighted the need for rapid technological advances to compensate for the sheer manpower of the large Russian army. The first step was to find the underutilized human resources up to now wasted in minor jobs. Werner Osenberg, the head of Hitler's Defense Research Association, was tasked with preparing a list of former scientists and engineers who had proved to be politically trustworthy. Osenberg complied, and the men and their families were quickly rounded up, and put to work on warfare-related technology. Including rocketry. These men, along with others and a substantial amount of slave labor, made remarkable advances in jet propulsion, explosives, and other military technology.

The US had been thinking along the same lines, and had begun formulating a plan to capture and utilize German human resources and technical assets as it became clear that victory in Europe was increasingly at hand. The goal was two-fold. We wanted to deny the value of such people/technology to potential enemies, and we wanted to use their expertise to our military benefit. Our efforts intensified when intelligence made a partial version of Osenberg's list available. Army Major Robert B. Staver was given the task of making a list of the people we wanted to have come work for us.

On July 20, 1945, the Joint Chiefs of Staff established a secret organization, codenamed "Operation Overcast," to use Staver's list to find and "recruit" important scientists and engineers, some of which had already been captured and were being held in southern Germany. Hitler had been defeated, but it appeared to many that the defeat of Japan would be a very long and very bloody affair. If German technical know-how could help end the Pacific War, that would more than make it OK to bring on board. It turned out that there wasn't really enough time, since Hiroshima was less than three weeks away.

After Japan's defeat, we feared that German military tech specialists would "free lance" after the War, operating from bases in countries with some Nazi ties or otherwise difficult for us to stop. The Operation Overcast team and their supporting brass wanted to bring them to the USA and put them to work in their specialties for our military-industrial complex. Additional scientists and engineers were rounded up in Germany prepared for sending here, including the number one person on both Osenberg's and Staver's lists, Wernher von Braun, the driving force behind the German V-2 missile program. "Recruitment" was first made in those regions of Germany soon to fall under Russian political control. Many were glad to go west rather than east, and put up no resistance. A total of ~1800 valuable personnel and another 3700 family members were eventually collected.

Von Braun and many of his team were on Osenberg's list, and since we knew that they had been responsible for designing and constructing the V-2, a weapon we couldn't stop, we wanted them badly. The U.S. Army Ordnance Corps had dibs on these men and marked the files of those they wanted with a **large paperclip**. They also would receive a number of captured V-2s in various stages of construction, along with parts and machine tools associated with the missiles, much of it booty from [Operation Lusty](#). NOTE: NASM's Ar 234 (the only one still in existence), their Do 335 heavy bomber (also the only one left), and their Junkers 388 (ditto) all were collected during Operation Lusty. And, BTW, the "Lusty" refers to "**LU**ftwaffe **Secret TechnologY**."

Operation Overcast was expanded after VJ Day. President Truman approved it as "[Operation Paperclip](#)," a nod to the Army Ordnance practice, and significantly expanded the pool of people sought. A few scientists/engineers had already been captured and brought to the US to work on war tools, such as [Herbert Wagner](#), the inventor of the [Henschel 293](#) guided missile, who had been captured in May, but Operation Paperclip really got rolling in the second half of 1945.

Von Braun and many key members of his team arrived at Ft. Strong, in Boston Harbor, in September, 1945. He and some of the "Paperclip Men" went to Ft. Bliss; others went to the White Sands Proving Grounds. On June 1, 1949, the program at Ft. Bliss, including von Braun and 130 of his team, was transferred to the Army's Redstone Arsenal outside of Huntsville, Alabama after Redstone was designated the Army's "Ordnance Rocket Center." One of their first efforts was the Redstone rocket, not powerful enough to put a larger payload into low Earth orbit, but powerful enough to send Alan Shepard and Gus Grissom on their sub-orbital Project Mercury flights a dozen years hence.

The USSR was much delayed in their efforts to acquire German technical personnel and material at the end of WWII fighting. They had suffered many casualties and infrastructure damage, and their political system was in some turmoil. But they did appreciate the value of the German technical assets. Finally, on October 22, 1946, Russian police/military personnel staged "[Operation Osoaviakhim](#)," a surprise round-up of ~2100 key German scientists/engineers in area, along with their families.

The USSR tested an atomic bomb on August 29, 1949, and the much-more complex hydrogen bomb on November 22, 1955. Operation Paperclip continued during this period.

Von Braun was a complex person. Evidence is clear that his pre-War interest in rocketry was inspired by a dream of sending payloads, perhaps even people, to the Moon and ultimately to Mars. He was important to Hitler's war machine, and was actually an SS officer, but there is some question as to his devotion to the Nazi cause. He did oversee, at least on paper, a pretty heinous slave labor force. But when he came to the US, he relished the opportunity to design and build large rockets. He was a gifted communicator, too, and shared his ideas of rocket-powered Solar System exploration with the 1950s US public via articles in *Life* magazine and other popular press, and via television with appearances on the *Walt Disney Show* and elsewhere. He and his fellow Germans became pillars of the Huntsville community and their memories are much revered there today.

When *Sputnik 1* was launched, followed quickly by *Sputnik 2* (big enough to carry an atomic bomb), and then Yuri Gagarin's orbital flight, the importance of spaceflight research literally skyrocketed (sorry). Von Braun's program mushroomed into the Marshall Spaceflight Center, one of NASA's finest; von Braun was its first director. BTW: The U.S. Space Camp facility lies immediately adjacent to Marshall.

Von Braun's rocketry, especially leading the development of the Saturn rocket, attracted a lot of public attention. But rocketry was not the only technology enhanced by the Paperclip guys. Seven of them had been specialists in synthetic fuel technology, vital to the Reich because of our attacks on Ploesti and other oil production facilities. They went to the US Bureau of Mines to work in the Fischer-Tropsch synthetic fuel plant in Missouri. Another contingent went to Wright Field in Dayton, to work with captured Luftwaffe aircraft they helped design. Other Paperclippers enhanced our capabilities in chemical engineering, physics, optical science, and other fields where their contributions greatly enhanced our industry.

Most of the Paperclip gang are gone now. But the awards they received show that their contribution to the US was great, indeed. Four of them won NASA's highest award, the NASA Distinguished Service Medal. One won the DoD Distinguished Civilian Service Award, the Department of Defense's highest civilian award. Three won the Goddard Astronautics Award, the highest given by the American Institute of Aeronautics and Astronautics. Two are in the New Mexico Museum's Space Hall of Fame. And one, Kurt Debus, was the first director of the Kennedy Space Center.

I understand the ambivalence many feel about the von Braun/Paperclip crowd. But, IMHO, the benefits they brought to society at large go a long, long way to absolving them of their wartime past. And really, where would we be today if all of them had gone to the USSR?

And not to put too fine a point on it, I'll briefly bring up the story of one Qian Xuesen (Hsue-Shen Tsien). He was a [brilliant](#) Chinese national who was an expert in mathematics, aerospace engineering, and cybernetics. During WWII, he worked on the Manhattan Project. Later, as a member of Theodore von Karman's research group at Cal Tech, he was one of the co-founders of the Jet Propulsion Laboratory. He was a trusted and important scientist.

Until the Red Scare years of the mid-1950s.

The McCarthyites accused him of having “communist sympathies” and stripped him of his security clearance. Unable to work in the US, he sought to return to China, the prospect of which scared US intelligence types. He was put under house arrest for over a year and later exchanged for some US pilots captured during the Korean Conflict.

When Tsien got back to China, he became a combination of their Robert Goddard and Robert Oppenheimer. He led the Chinese effort to build an atomic and then a hydrogen bomb, and his work led to the deployment of the Dongfeng and Long March ballistic missiles. He founded the Chinese Space Program. And they now have a rover headed for Mars.

A [pretty valuable guy](#). And we kicked him out of our country because his nationality offended our political sensitivities. Too bad for us that we didn’t treat him like we did von Braun.

In addition to the linked material above, you may also be interested in:

A website with a link to a 1946 *Harper’s Magazine* article about Operation Paperclip:

<https://www.scientistsandfriends.com>

Neufeld, Michael, 2008, Von Braun: Dreamer of Space, Engineer of War, Vintage Books, ISBN 0307389375

Neufeld, Michael, 2013, The Rocket and the Reich: Peenemunde and the Coming of the Ballistic Missile Era, Smithsonian Books

Exercise caution when researching Operation Paperclip further; since it was/is a controversial topic, there are a lot of passionately-spun accounts of the participants and their motives....

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