John Paul Stapp, MD, PhD

John Paul Stapp, MD, PhD, a US Air Force researcher who subjected himself to huge gravitational forces in the study of human endurance when exposed to supersonic maneuvering and mishaps, died November 13, 1999, at his home in Alamogordo, NM, at age 89.

Beginning in the immediate post–World War II years, he volunteered to be strapped into rocket-powered steel research sleds on concrete-embedded tracks to determine human tolerance to acceleration and deceleration forces. His findings are credited with playing a key role in proving that humans can operate vehicles traveling through space at ever-increasing speeds and can escape from them in an emergency. On the ground, for the general public, his data were critical for today’s standard supplying of seat belts and air bags in most US motor vehicles.

The son of American missionaries, Stapp was born in Bahia, Brazil. After high school in Texas, he became an English major at Baylor University there. Then, when called upon to help nurse a 2-year-old cousin, who had been burned when the boy came too close to an open fireplace, Stapp resolved—after witnessing the child’s death—to become a physician. However, family finances were limited and he had to undertake a variety of jobs to stay in college, finally earning a PhD degree from the University of Texas. In 1939, at age 29, he was admitted to the University of Minnesota Medical School.

Like most physicians graduating in the early 1940s, Stapp entered wartime military medical service. He was preparing to return to civilian life from a variety of US Army Air Corps medical assignments when 2 developments changed his decision. First, the military was designing aircraft that could fly faster and higher than ever before, but it was unknown whether humans could tolerate such stresses, much less escape in an emergency. (About the only data compiled to that point were in a handbook that the wartime German air force prepared for its first jet pilots.) Second, while attending a National Academy of Sciences meeting in Washington, DC, Stapp concluded that civilian scientists were “looking down” on military researchers. This view raised his contrarian hackles and he decided to remain in what was about to become (1947) the US Air Force.

In December 1947, Stapp rode the rocket-powered research sled in the Mojave Desert locale of Edwards Air Force Base (AFB), Calif. Near the end of the concrete-embedded track, a trough between the rails held dammed-up water. As the sled streaked down the track, metal scoops beneath it broke the dams, scooping up the water and funneling it through vents on the sled to provide braking.

By May 1948, Stapp had ridden the sled 16 times and was subjected to 35 times the usual gravitational force (35g), making his body briefly—during the test—weigh slightly more than 3 tons. In 1951, Stapp raced down the 2000-foot track at Edwards, enduring 48g. Then, on December 10, 1954, at Holloman AFB, NM, he became known as “the fastest man on earth” when he reached a speed of 632 mph on a research sled that stopped in 1.4 seconds, momentarily changing his body weight of 168 lb to 6720 lb.

In the course of his research rides, Stapp fractured both wrists and most of his ribs, injured his coccyx and sacrum, endured repeated retinal hemorrhages, and jarred loose 6 dental fillings.

Stapp retired from the Air Force in 1970 as a full colonel. He received the military’s Legion of Merit, Cheney Award for Valor, and Distinguished Service Medal. He was also the recipient of numerous honors from the National Aviation Hall of Fame, International Space Hall of Fame, Safety and Health Hall of Fame, National Aeronautics and Space Administration, Jet Pioneers of America, and the military medical community.

Phil Gunby
Tulsa, Okla

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