

Skydiving from Space



The [Red Bull Stratos](#) [1] team has kept itself under wraps until today's press conference at the New York Academy of Sciences in NYC. The ambitious project marks the first major attempt at breaking an old but daunting skydiving record, one that starts at the edge of space.

In 1960, U.S. Air Force Captain [Joe Kittinger](#) [2] stepped out of a capsule at 102,800 feet above the Earth's surface and, in just minutes returned to the surface by simply falling. The falling part was easy. The surviving part was not—his first jump, from the Excelsior I module nearly ended in disaster when a parachute cord wrapped around his neck. His main chute, attached to a timer, deployed and saved him. In Excelsior III, he failed to report a malfunctioning glove and nearly lost his hand to depressurization. But his record-breaking jump was successful, and having fulfilled its mission, the Air Force stopped jumping from record heights.

His would-be successor is cut from the same mold, but has traveled a far different road. [Felix Baumgartner](#) [3] wears two tattoos—one, on his arm that says “Born to Fly” and another on his back, 502, that marks his BASE-jumping code—and has built a career out of from skydiving with frightening regularity and launching himself from architectural landmarks like the Gold Gate Bridge and Taipei 101 with a parachute on his back. He is a daredevil, but according to Kittinger and the rest of the Red Bull Stratos team, he is a calculating one that has survived thousands of skydives by knowing how to prepare and when to back away from a jump.

So then, is this jump a stunt? In a way, it is. This is sponsored by Red Bull, after all, which has associated itself with extreme, entertaining, and daring sporting endeavors for the last decade or so, from the Dakar Rally to snowboard racing.

But with people like Art Thompson, a veteran aerospace engineer who helped develop the B-2 bomber, and Jonathan Clark, a six-time Space Shuttle crew surgeon and advisor to the National Space Biomedical Research Institute, on board to develop the technology and training necessary to perform a jump from 120,000 feet, this attempt likely to mean much more than a stunt for three big reasons:

- 1) Mach 1. Blackbird SR-71 pilot Bill Weaver was forcibly ejected from his shattered plane at more than Mach 3. His copilot died in the accident. Weaver blacked out, but woke and lived to tell the tale of the only person to have traveled at more than Mach 1 in the Earth's atmosphere in just a flight suit. Baumgartner, if

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Published on Chem.Info (<http://www.chem.info>)

he succeeds, will be the second, achieving between Mach 1 and 1.2 during his fall. Kittinger didn't quite achieve Mach 1, owing to his lower jump height. A lot can go wrong. Testing is obviously sparse, so this jump will add valuable data to the potential survival chances for those returning to the ground from space in just a pressurized suit.

2) Data collection and spacesuit design. Because Baumgartner will be traveling in a near vacuum, and because his suit will be filled with nearly pure oxygen, the use of traditional electronics and sensors will be fraught with hazard. According to Thompson, the technology necessary to collect biometric data they are hoping to get necessitated new, innovative solutions. In addition to physiological data, GPS, cameras, and other systems will be operating in Baumgartner's suit continuously. Suit design is notoriously difficult, and the Red Bull Stratos team needed to heavily redesign the emergency suits already in use by NASA aboard the Space Shuttle. Greater mobility was necessary, but so was the incorporation of highly-aerodynamic drogue parachutes.

3) Commercial sponsorship. If efforts like [SpaceX](#) [4] and [Virgin Galactic](#) [5] are an indication of what's in store for space travel, then Red Bull Stratos is just another necessary step on the road toward safe space travel for all humans.

Much is still under a blanket. The dates for the jumps haven't been announced. The locations for the jumps haven't been revealed. The cost of the project, while assumed to be in the millions, has also been kept top secret.

There's a good reason why a jump like this hasn't been attempted very often. A lot could go wrong. Many efforts literally don't get off the ground. The few successes have occurred with the support of the U.S. Air Force or Russia's own military might: in 1962, Eugene Andreev jumped from 85,400 feet.

Baumgartner must complete several jumps at steadily escalating heights before attempting the record. Although he is reportedly comfortable in the pressure suit, he has yet to jump from more than 33,000 feet (which was during his flight across the English Channel). Sudden depressurization, unintentional spins, electrical or mechanical malfunctions, and the hazards of aerodynamics around the sound barrier all threaten to snuff out Baumgartner's attempt.

But, as was evident at today's announcement, the 40-year-old is confident: he has already earned his pilot's license, and after his successful jump, which will supposedly take place later this year, he will fight fires from the cockpit of a helicopter. Also dangerous, he admitted, but less risky by far than jumping from space.

Would you skydive from space? Email me at paul.livingstone@advantagemedia.com [6].

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Source URL (retrieved on 04/18/2014 - 6:43pm):

<http://www.chem.info/blogs/2010/01/skydiving-space>

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- [1] <http://redbullstratos.com/>
- [2] http://en.wikipedia.org/wiki/Joseph_Kittinger
- [3] http://en.wikipedia.org/wiki/Felix_Baumgartner
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