Dick Rutan sent this *“Good summary of Pete’s ride down…..****SpaceShip Two***

*Thought this reporting from Air & Space would be of interest.”*

The Virgin Galactic rocket plane had just broken the sound barrier and was shooting toward the heavens when it began disintegrating, battered by powerful aerodynamic forces.

The pilots were strapped into their seats as entire pieces were torn from SpaceShipTwo. At more than 10 miles high, with fingers no doubt numb from the cold, Peter Siebold somehow escaped from the hurtling wreckage.

Siebold, who had been flying Virgin Galactic's spaceships for a decade, had to rely on his experience and his instincts. He had a parachute but no spacesuit to protect him from the lethal environment as he plunged toward Earth at close to the speed of a bullet.

At almost twice the height of Mt. Everest, the air is dangerously thin and the temperature is about 70 degrees below zero. It was a real world case of survival in the face of disaster, like the movie "Gravity."

Siebold managed to deploy his parachute and land in the Mojave Desert. His shoulder was smashed and a fellow pilot described him as "pretty banged up." He was discharged from the hospital Monday.

"The fact that he survived a descent of 50,000 feet is pretty amazing," said Paul Tackabury, a veteran test pilot who sat on the board of directors of Scaled Composites until it was sold to Northrop Grumman Corp. "You don't just jump out of aircraft at Mach 1 at over 50,000 feet without a space suit."

Siebold's partner, 39-year-old copilot Michael Alsbury, was found dead, strapped into his seat in the wreckage.

Hundreds of test pilots, like Alsbury, have died in their work over the last century. Edwards Air Force Base, where some of the nation's most secret planes are tested, is named for pilot Capt. Glen Edwards, who died in an experimental craft in 1948.

But Siebold's jump is part of a long history of extraordinary feats of survival by test pilots who have defied the odds through skill, faith or luck, perhaps nobody can appreciate Siebold's gift for survival more than Bob Hoover, the famed 92-year-old test pilot who survived five crashes and lives in Palos Verdes.

"I have been broken up from head to toe," he said. "It is the reason I am all crippled up now."

In October 1947, he ejected out of one of the first combat jets, the Republic F-84, and hit the tail at 500 mph, breaking both legs and busting his face. Several years later, he was trapped in a disabled F-100 Super Sabre that slammed into the desert, bounced 200 feet back into the air and then slammed down again. It broke his back. Rescue crews had to chop him out of the wreckage. His career continued for decades longer and he eventually flew 300 types of aircraft.

As for Siebold, Hoover said, "It is a miracle he got out. At 50,000 feet, your survival time is very limited, and for him to pull the rip cord in those conditions is pretty surprising. I am so happy for him."

The exact details of Siebold's more than 10-mile fall are still unknown. On Monday night, federal investigators said they still had not been able to interview him.

"We don't know how he got out," National Transportation Safety Board spokesman Eric Weiss said Tuesday.

Ken Brown, a photographer and avionics engineer who was taking shots of the test flight Friday, said his pictures show that the rocket plane was in pieces in a few moments.

SpaceShipTwo was released from its WhiteKnightTwo ferry craft at somewhere between 45,000 and 50,000 feet. Then the rocket motor ignited, blasting the craft over the next 13 seconds to more than Mach 1, NTSB investigators said. The rocket plane malfunctioned after its tail, known as a feather, deployed at the wrong time. The NTSB said it could take up to a year to unravel the cause.

Brown said he believes the plane may have been at 60,000 feet or higher when it broke apart.

"Peter is a lucky guy," Brown said. "The vehicle disintegrated around him. He would have found himself falling."

In such thin air, Hoover said it is almost impossible to inhale or exhale.

"It is the most horrible feeling in the world," Hoover recalled.

Exactly when Siebold pulled his rip cord is unknown. He may have fallen freely for miles to exit the cold as fast as possible. Brown believes Siebold may not have deployed his parachute until well under 20,000 feet.  Virgin Galactic's SpaceShipTwo crashed in the Mojave Desert on Friday during a test flight. There were two pilots on board; one was killed and the other injured.

SpaceShipTwo pilots wear thin flight jumpsuits, offering little protection against the bitter cold of the upper atmosphere. It was a decision made early in the program by aerospace pioneer Burt Rutan, who designed the predecessor Spaceship One, Tackabury said. The craft was made by winding composite fibers into a strong pressure vessel, and Rutan wanted small hatches to preserve the strength of that structure, meaning large spacesuits would not fit, Tackabury said.

Friday's test flight was crucial to Virgin Galactic's program, which aims to ferry wealthy tourists to the edge of space. The WhiteKnightTwo and SpaceShipTwo both had grown over their designed weight, Tackabury said, meaning the spacecraft would have to launch from a lower altitude than the planned 50,000 feet. To compensate, Scaled Composites was testing a new hybrid solid rocket motor that used a faster burning fuel producing greater thrust.

The need to test experimental aircraft has always taken pilots to the edges of safety.

In 1966, Lockheed test pilot Bill Weaver was flying an SR-71 at 3.2 times the speed of sound at 78,000 feet when it began to disintegrate around him, just like SpaceShipTwo. He blacked out under the severe forces. When he regained awareness, his plane was gone and he was flying through the air strapped to his seat. The absurdity of his situation led Weaver to think, "Therefore I must be dead," he wrote later.

In fact, he came to his senses and parachuted to a New Mexico cattle ranch, where the owner rescued him.

Test pilot Chuck Yeager, the man who first broke the sound barrier, had his own fall from space in 1963 when his Lockheed NF-104A lost control at 108,700 feet, 21 miles above the Earth. The plane went into a spin and plunged to 7,000 feet while Yeager desperately tried to restart the plane's engine. Finally, Yeager ejected. But the exit was far from clean, and rocket fuel from the ejection seat leaked over Yeager, giving him second- and third-degree burns, according to written accounts. When rescuers arrived, Yeager was reportedly standing with his helmet in the crook of his arm and his parachute properly rolled up.

Siebold, the father of two children, has flown 35 different aircraft and holds a license as a glider pilot as well, according to his biography. His official company portrait shows a man with dense wavy black hair squinting against bright desert sunlight and wearing a sly smile. He has an engineering degree from Cal Poly San Luis Obispo and has worked at Scaled Composites since 1996.

"I just think it was a miracle," said his Tehachapi neighbor Maureen Cornyn. "I'm very thankful for them. But again, you're torn because there's somebody else's father and son that's been lost."