

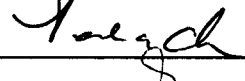
AFEHRI File 19-10

**Research Materials/Source Documents
ENLISTED FIRSTS**

FILE TITLE: 1st Human Supersonic Ejection: TSgt James Howell

Reviewed by:

AFEHRI Representative  **date** 14 NOV 97

EPC Representative  **date** 26 Nov 97

Scanner Operator  **date** 26 Nov 97

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FOR THE MEN RESPONSIBLE FOR AIR DEFENSE

Interceptor

volume 3
number 7

Air Defense Command
Lt. Gen. Robert M. Lee
Commander

Published by the Chief of Safety
Col. Robert L. Harriger



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spotlight

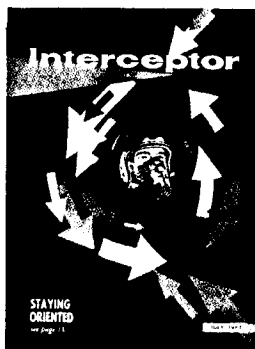
No man is the absolute lord of his life.

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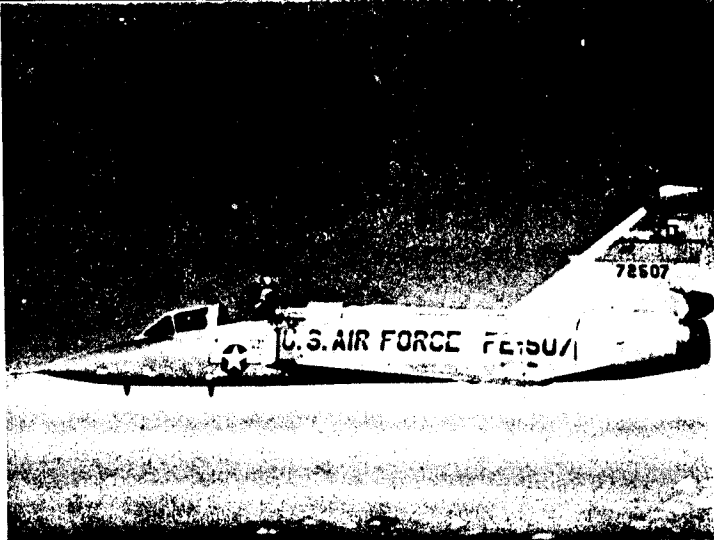
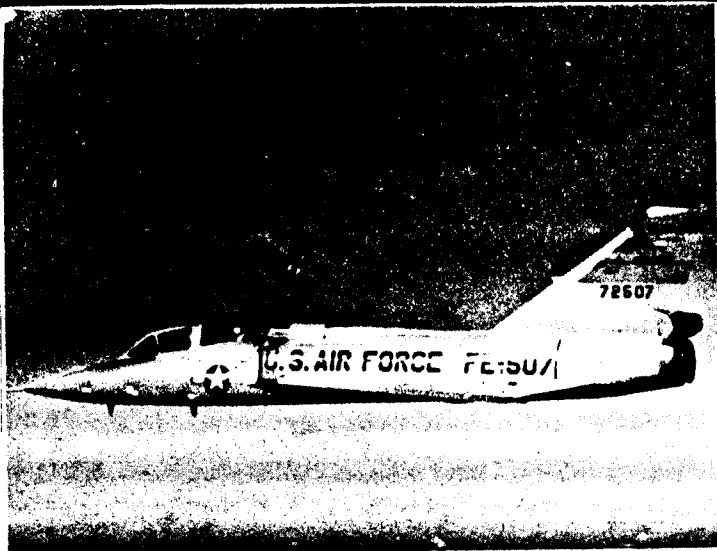
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OUR COVER

Spacial Disorientation, a subject treated in many ways by many people, is portrayed on our cover and discussed in our text.



the LIVE one

by

Sgt. JAMES HOWELL

*As told to Stan Mahoney
General Dynamics
Convair Service Engineer*

PROBABLY the most talked-about escape system in use today is the supersonic seat. Whenever the subject is brought up, someone usually wants to know when they are going to make the live jump. The time has come to tell the story. Sgt. James Howell of the 6511th Test Group made the live subsonic ejection Tuesday morning, June 6, right on schedule.

Sergeant Howell is a big fellow, about six feet two, weight 195 pounds. He is 32 years old, married, and has three children; a girl and two boys. He is a jump-master assigned to the 6511th Test Group at El Centro, Calif. He has made over 400 parachute jumps; two of them have been drop type from the supersonic seat out of a C-130 aircraft. This is Sergeant Howell's story of the live jump test at Holloman AFB on Tuesday, 6 June 1961. He starts with the preparation and indoctrination made on Monday, 5 June 1961.

"Early Monday morning, June 5, they suited me up with a CSU-4/P partial pressure suit, standard AP boots, and an MA-3 helmet for the cockpit fitting and indoctrination. We arrived at the hangar at about 0830. There were two workstands alongside F-106B No. 59-2507, which is assigned to this project and has been used to make all the dummy ejections to date.

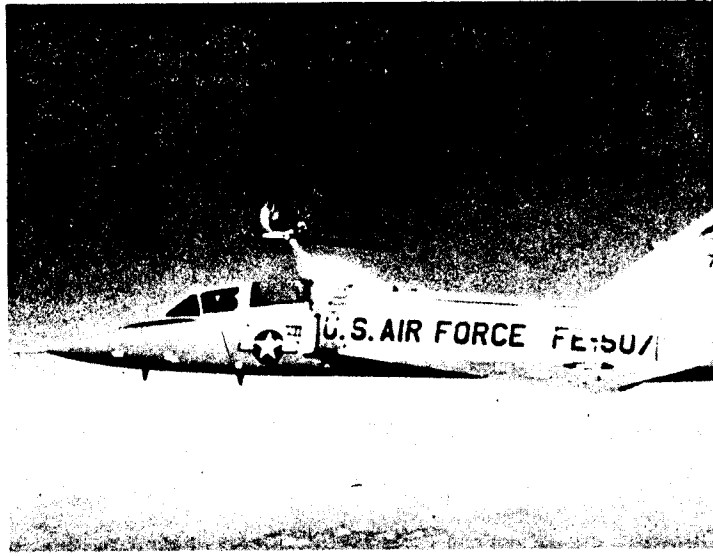
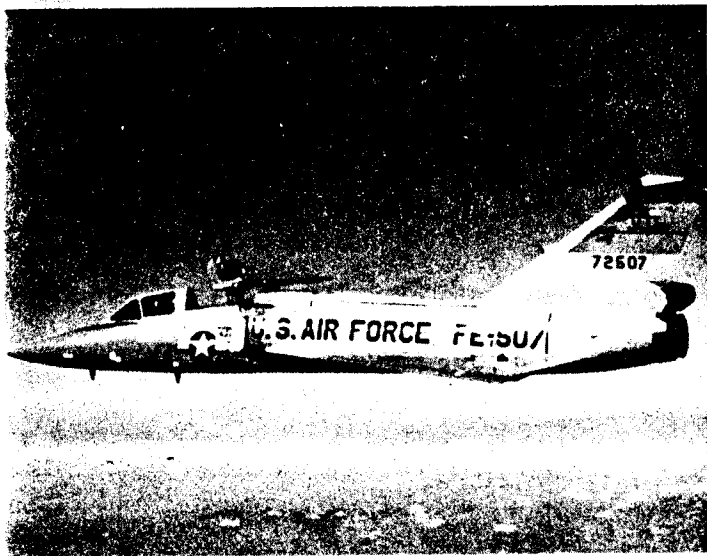
"A group of engineering type people were on the stands, some from the Defense and Equipment Systems Engineering Crew Stations,

Wright-Patterson AFB, some from Aerospace Labs at Wright-Patterson, my own people from the 6511th Test Group, and Convair representatives. They have the responsibility of setting everything up for the run, and this cockpit fitting and indoctrination flight is a very important operation. While they were going through their check-off on the aircraft, my own people were making last-minute adjustments to my equipment.

"To get some idea of what my outfit was like, they had me rigged up with a stopwatch and a mirror on my left wrist, and an altimeter on my right wrist. The mirror is used to observe the helmet and canopy of my chute after ejection; it's like a rearview mirror, because I can't look up very easily with the MA-3 helmet. The stopwatch is used to start the countdown for ejection, so I wouldn't have to rely on my own count on check points.

"At about 0900 they placed me in the cockpit for the final fitting and dress rehearsal. We went through as many of the positioning sequences as possible: seat pan elevated, my knees pulled up to my chest, foot pans retracted. I was pretty well rolled up in a ball, especially with the reserve chute on my chest, but everything seemed to fit O.K.

"They completed adjustments of my personal equipment and checked out the communications equipment about 0945. They had made up a special lead so that I could have voice communication with the pilot clear up until I was 'piggyback' on



the aircraft; it would disconnect when the breakaway bolts fired. They also had a 'chicken switch' built into the 'D' ring which I could use if I thought someone had goofed along the line.

"About this time the canopy was closed to further check on cockpit clearances, and so on. The canopy is a special all-metal type, inclosing only the rear cockpit. There are two small 8 x 10 windows, one on each side at eye level, so I can see out. There is also a window up front in the back of the pilot's cockpit, with floodlights rigged to light up just before ejection.

"By this time I had been in the cockpit about an hour for this fitting, and it was getting pretty hot even with the vent air pumped in from a cart outside. They opened the canopy about 1000. I climbed out, and the first part of the dress rehearsal was completed. A flight was scheduled for 1315.

"After lunch they suited me up again for the indoctrination flight. It was hot out there on the ramp that afternoon. I was in the suit almost two hours before takeoff. Major Hendrix taxied out at about 1300 for takeoff. He got us up to altitude real fast, and I was glad because there was no vent hose in the aircraft, and I was hot in that suit. We were to go through everything on the indoctrination flight except pulling the 'D' ring and ejecting. We even had the chase plane along. I went through the entire countdown, and everything went O.K. except that my face plate fogged up so badly that I could

hardly read my checkoff list, and my intercom was very bad—I couldn't even hear the pilot. We returned to the base, and I was glad to get back, because I was still hot.

"We went back to the motel. I was pretty tired and beat from the afternoon heat, so I turned in to get a little rest. Had dinner a little later and went to bed at nine thirty, but they had us up at 0215, so I didn't get much sleep. The fact is, I was pretty anxious about the whole thing and couldn't sleep very well. Meanwhile, the people back at the base were checking out the face plate fogging and communications problems. They found some wiring trouble and had everything cleared up by eight thirty that evening.

"We arrived at the base at 0300 the next morning, 6 June. They suited me up again, and we were at the aircraft by 0505. They had already started countdown, and the same old faithful fellows were on the stands, going about their job of getting everything ready. Every little item was checked many, many times, and I want to tell you I surely appreciate all the thorough checking those fellows did. They really took good care of me.

"They put me in the aircraft and closed the canopy at 0515. It was cool this morning, and even after they removed the vent hose, I wasn't uncomfortable—much better than on the indoctrination flight. I could talk with Major Hendrix, too, and this was a relief. Major Hendrix taxied out, and we took off at 0615. The weather was just fine for the run—

only three knots surface wind and only a few hazy clouds in the area.

"The flight to altitude was nice—no sweat—like on the indoctrination flight, and the face plate was real clear. I could hear all the stations reporting on the ground. We were reaching the range area now and started the final countdown. I had a lot of things to check off. I had memorized every item and didn't have to rely on the list pasted on the instrument board. I went through every item and confirmed with Major Hendrix. He looked back at me in his rearview mirror and asked me how I felt. I told him fine. Then the 60-second amber warning light came on. The camera flood lights were on now, too. My fingers were grasping the 'D' ring, my head was firm against the head rest, and my chin tilted down against my chest. We got the warning light and started the 10-9-8-7-6-5-4-3-2-1, and I pulled the 'D' ring . . .

"After I pulled the 'D' ring there was a big 'whoosh' . . . and I could feel myself being lifted out of the cockpit. I caught a glimpse of the horizon, then I was over on my back. I could feel the sensation of lying on my back for quite a little while, it seemed. Then the breakaway bolts fired, and I could feel myself pulling away from the aircraft—not too fast, just 'whoosh' and away. I got a glimpse of the aircraft going by to my left and below me. There was no great acceleration on the way out; it just felt like someone picked me up and heaved me out. It was real smooth — just wonderful.



As the Sergeant said, "it was tight."

"After leaving the aircraft, I made a slight turn to the right, a sort of roll. I moved a little to the left, and it straightened out real fine. It started to turn to the left, and I moved my shoulders, and it straightened right up again. The ejection was made at 22,000 feet and 338 KIAS.

"At 15,000 feet, the drogue gun fired and I got quite a jolt from it; then I felt the drag chute deploy, and it gave me another good jolt—sort of a 'thunk,' or snap. Separation from the seat was very fast following drag chute deployment.

"It didn't seem any time at all from drag chute deployment until

the main chute deployed. I felt something bump my head after the main chute deployed. It was the head rest before it cleared the area, after it cut free from the main parachute; it was a good hard bump. Then I looked up with my rearview mirror and saw my canopy full, and it was wonderful. I signaled the helicopter that everything was O.K. by making a spread eagle.

"The rest of the ride down was real smooth, since there was no wind to speak of. I jettisoned my reserve parachute at 1,000 feet. I landed on my feet, made a slight kneel to my knees, spilled the air from my chute,



And later, "it went fine — it was beautiful."

and stood by for the helicopter.

"If you are going to eject, this is the way to do it.

"When the helicopter landed at the base, they took me to the hospital and found that I had cut my lip on the exhalation valve in the helmet. It wasn't bad. I also had a small cut on my chin from the helmet, probably when the drag chute deployed."

During the debriefing, Sergeant Howell was asked about the effect of acceleration during the elevation and rotation of the seat.

"No sweat," he said. "It was real smooth, just lifted me out like someone was heaving me out of the cockpit."

He was asked if he blacked out or greyed out at any time, and he replied, "Not at all. I was completely aware of everything at all times."

When asked if he noticed any wind blast during rotation, he said, "None." Any head rocking during ejection, and he said, "None at all." Any noticeable time between foot retraction and elevation out of the cockpit? He replied, "Couldn't hardly tell; it was so fast." Any hang-up of equipment during seat-man separation? He replied, "None."

He was asked which opening shock was the greater, that of the drag chute or the main chute. He said, "The drag chute was the only one that gave me a opening shock."

When asked about the difference between the test seat and a production model installed on operational aircraft, Sergeant Howell commented, "Well, of course, we didn't hook up to the survival kits, because we are going to have the soft pack survival kits pretty soon, and there was no need of taking a chance on one of them bouncing back at me. Also, the telemetering gear was stowed in the survival kits to provide full instrumentation during ejection, and separation of the kits from the seat would have been difficult because of the wiring."

He was asked what his wife thought about his making this live ejection. He replied, "Well, you see, my wife Betty didn't exactly know I was going to do it. I told her I was the alternate jumper all along. This morning, as soon as the helicopter landed, I called her up and told her I had been assigned to make the jump. Then I told her she didn't have to worry, because I had already made it."

