Reentry

By

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Alex Ducote was about to make history. He had graduated with high honors from the country's top engineering school and was offered a job at Klutotéhknix in the R&D department. He'd been largely responsible for the development of the Soteria E.M. Shield, and now after ten years of tests, he would be the first person to perform an atmosphere reentry with his own creation.

The Mk. III E.M. Shield was attached to an experimental Apheleia singleship hull; it was little more than a lifesystem and control room attached to a rocket. Alex had collaborated on the ship designs at Apheleia and had made a point of using the cheapest and least protective materials to prove something just barely strong enough to keep out vacuum could safely make it through the intense heat of reentry with his shield.

The launch went off without a hitch. The flight up took around three minutes. He'd stay in orbit for about fifteen before descending back to earth. He reached his apex of 130 kilometres and began prepping the shield.

As the thermometer began to rise Alex activated his shielding. Electromagnetic nodes attached to the hull began to whirr to life, and what heat had begun to gather quickly dissipated as the E.M. fold enveloped the craft and funneled the atmospheric particles away from the ship.

It took mere seconds to reach terminal velocity. He looked at the gauges, baffled, as he reached and continued past his estimated T.V. He was flying toward the ground at *speeds* that would normally tear a ship apart, the only thing saving his fragile hull was the strong electromagnetic fold.

His speculations were correct, and the atmospheric particles hitting the ship during reentry that cause heat buildup could be funneled around the ship with a strong E.M. lattice, what he didn't account for was the loss of drag. By funneling all the air around his vessel he'd inadvertently eliminated all drag force on his ship,creating a frictionless rocket powered lawn dart, and due to the cheap materials he'd had the ship made of, he'd signed his own death warrant. He was plummeting toward the earth at mach 3 and rising, but if he turned off the E.M. fold to slow down he'd burn up in seconds.

None of the tests he'd run had accounted for loss of drag, and it hadn't occurred to any of his colleagues either. But the shield worked! Would they continue his research? Or would they determine the idea faulty and shelve it? He'd have seconds, maybe minutes to come up with a solution and figure a way to send it to them, but what would survive the crash?

He sat back in his seat and thought for what felt like hours. *Does time really slow just before your death,* he thought? After some consideration he determined his best solution would be to drag a E.M. shield surrounded plate behind the ship to account for the drag loss, and use the funneling system to direct more atmosphere into the metal emergency chute.

He could manipulate the fields from here, but he had nothing to use as a chute, and at these speeds he wouldn't be able to open the airlock without the risk of being torn apart.

The ground was growing closer and he was writing his design changes into the ship's computer in hopes it might survive the impact when he noticed the ocean only a few klicks away. If he could alter the path of his falling coffin he just might save the equipment from impacting the rough terrain he was currently on course with.

Alex jumped to the field manipulation console and deactivated the nodes on one side of his vessel. The onboard temperature jumped to almost 130 °C, but the newly exposed ship caught drag, hard. The ship dramatically lurched several degrees and set him to land somewhere several kilometers into the Atlantic. He reactivated the nodes to complete the field and let the hull cool before repeating the maneuver and slightly adjusting his landing angle.

The crash was more devastating than he thought, but he'd managed to get his ship traveling almost parallel with the water's surface. He'd found that his E.M. fold worked just as well in water as it did in air. He'd plunged straight in and kept going before he'd shut off on the E.M. nodes.

He was meters below the surface, but finally decelerating. Once he'd slowed to a safe speed he donned a pressure suit and allowed the cabin to flood. He gasped as the ice cold water hit him, the suit wasn't designed to keep him warm. As it quickly filled his tiny pilot compartment he wished he'd worn warmer clothes. Once the pressure had equalized and he could finally pull the door fully open.

The black box with his design alterations needed to reach the surface, so he tied it to an extra raft and sent it up. He knew he was much too deep to just surface. His suit was built to resist vacuum, not the pressure of the deep sea. He grabbed some things from the cabin and tied them to his suit to counteract his buoyancy.

Stopping and adjusting to pressure differences was difficult without a depth meter and a watch, so Alex lingered for quite some time when he'd decided it was time for a checkpoint.

His entire trip up to 130 kilometres and back down had taken about twenty minutes, but surfacing from thirty-some meters would take him the better part of an hour. Ships had arrived for search and rescue well before he surfaced and divers had found him and gotten him out of the drink.

Days later after he had recovered from his traumatic experience he returned to his lab to see what his colleagues had done with his alterations. A carbon bond high tensile cloth parachute with implanted E.M. nodes was already being developed.

He and his team had revolutionized spacecraft manufacturing, and he knew he'd made such an impact that he'd be remembered for generations.