

A Health Parachute

by

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The sky was full of color, on this clear autumn afternoon, as sky divers descending with their unique acrobatic maneuvers, finally landing near the Hobby Field runway. My medical office overlooks the Creswell airport, sometimes a distraction to this AME turned pilot, who must spend most days indoors, occupied with patient care. There is something special about the adrenaline rush that comes when a jumper leaves the security of his seat in the Cessna Caravan, and takes to the skies. The level of trust required to do such brave deeds, involves both the chute, and the qualities of air, wind, and thermals, with the skill that comes from practice.

It was the noted scientist Leonardo da Vinci who drew a sketch of a device (c. 1495) which could lower man to the earth safely. Called a maximum drag decelerator, the cloth material was pulled tightly over a pyramidal structure. However, da Vinci never made the device, and it was left to Fauste Veranzio to construct one and jump from a tower in Venice in 1617. Balloons came next with two famous brothers, Joseph and Jacques Montgolfier, succeeding in 1783 in lowering animals to the ground from rooftops with balloons. The first emergency use of a parachute was made by Jean Pierre Blanchard in 1785 after his hot air balloon exploded. Subsequently, Blanchard began working on a foldable silk parachute, to replace the rigid frame ones, which were too bulky and heavy to save many lives.

For another century, parachute use was confined to carnivals and daredevil acts, and some even today would characterize such aerial acrobats similarly. A military man Captain Thomas Baldwin contributed to the parachute system when in 1887 he developed a harness. By 1890 the idea of folding or packing the parachute in a knapsack-like container was born. Kathchen Paulus that year demonstrated how a small parachute could inflate, then pull open the larger second chute. But practical use of such ingenious devices would have to await the invention of the airplane.

The word parachute seems to have originated with the combination of two French terms. The French prefix “para” means “protect against” or “shelter from” as used in the word *parasol* (to shelter from or protect against the sun). The French noun “chute” is based on the Old French word “cheute,” meaning a fall or descent. Flying or dropping from heights in the middle ages were obviously trial and error ventures. It would only be a matter of time until in-flight failures would be seen. Then the search was on for something that would protect against an injurious or fatal fall. Adding cushions or springs to the bottom of the passenger basket just did not work well enough. So, it was inevitable that a parachute had to come on the flying scene.

Out of this experience a whole host of related terms have arisen. Business men have their “golden parachute” to defend their company from hostile takeovers. The IRS is very interested in this kind of parachute, as are retirees, labor unions, and corporate executives. There is a creek in Colorado named Parachute, as well as a small nearby town that bears that name. It has a cemetery but no airport, much less a sky diving school.

The first jumps from an airplane took place in 1911 and 1912, where Grant Morton threw his folded silk parachute out of his arms as he left the plane, and Captain Albert Berry’s 36 foot parachute had a trapeze bar for him to hold on to as he jumped and descended to the ground. Then the first free fall jump was made by Georgia “Tiny” Broadwick in 1914. But the military did not believe that the human body could tolerate the experience of a free fall for more than a few seconds without blacking out. It took a World War to convince the world of the safety of sky jumping, with the paratroopers and their rapid deployment of a strike force by dropping men, equipment, and weapons behind enemy lines. The Germans utilized this even more effectively in World War II with their blitzkriegs over France, Holland, and eastern European countries.

While there have been fatalities at most sky diving airports, including Hobby Field in Creswell, the sport has improved in safety with several new inventions. The presence of automatic chute openers, which trigger at preset altitudes offers a measure of security, along with the auxiliary chute which provides two options for a controlled descent. In the 1960's the sport parachute began to replace solid cloth parachutes, modified with drive slots that provide greater stability and horizontal speed. NASA helped create a parachute that would enable a disabled plane to float safely to the ground. Cirrus now uses the Airframe Parachute System (CAPS) as standard equipment on its four-seat single-engine SR20 and SR22 aircraft.

During the early space projects, Rogallo developed a single membrane flexible wing known as the parawing. Designed originally for the recovery of reentry vehicles, the parawing did not have reliable opening characteristics at high speed, essential for free fall enthusiasts. A kite maker, named Domina Jalbert, modified the parawing into a ram-air parachute, which maintains its profile by trapping air between two rectangularly shaped membranes, sewn together at the trailing edge and sides. With several ribs on the inside to maintain airfoil characteristics, stabilizers are added to prevent side slipping. Dynamic stalls may be performed with the parafoil, so that landings are made with accuracy and at zero velocity.

The first fatality from a parachute jump occurred in 1837 when Robert Cocking fell to his death. Naturally, public opinion was affected, as it is today from similar incidents. Cocking's jump from 5000 ft. utilized an inverted cone-shaped parachute (point down), an aerodynamic mistake which proved very costly. The most recent fatality occurred in the summer of 2005, in Paris, as a Norwegian man leaped off the Eiffel Tower in a publicity stunt. His parachute got stuck on an upper deck of the monument and came off. The 31 year old man had entered the tower with a hidden parachute and a helmet that had a small video camera attached to it. He jumped from the tower's second deck at 380 feet, then with parachute detached, he crashed onto the 182 foot-high first deck of the Paris landmark.

The Eiffel Tower has long attracted daredevils. Franz Reichel, a mustachioed Austrian tailor, was killed leaping from the first deck in 1912 to test a tent-like parachute coat he had invented. He is said to have died of fright before hitting the ground. We don't recommend such experiments, for more reasons than the risk of uncovering previously undetected heart disease.

Finally, in regard to health and prevention, we take a look at our lifestyle. Could it be that pilots, and sky jumpers, might pay more attention to their pre flight survey of the avionics, the controls, and the empennage, than they pay to the pilot's computer located between the head phones? Does the parachute enthusiast, care for his health before the jump, and afterwards, with a great care as he or she does when airborne, floating down through the breezes with onlookers in awe?

As an Aviation Medical Examiner, I would suggest that we give greater attention to the prevention of heart disease, to a diet that is truly heart healthy, cuisine that can also prevent heart disease and cancer! And, to avoid alcohol, not only to escape the impairment of judgment and discernment and vision which will help a pilot or a sky jumper judge distance, analyze weather patterns, wind or thermal updrafts, but to keep every brain cell alert to the needs of family, work, and community. True health is not a leap into uncertainty, it is a well planned cooperation with natural law, physiologic principles that govern our organ functions, that can prevent accidents before they happen, that will forestall disease before it even develops. In reality, when it comes to your health, and the prevention of premature killer diseases, you have to "pack your own chute."

*[Doctor Hansen, author of the popular book on home health care, **Get Well At Home**, currently serves as medical director of the **Emerald Valley Wellness Clinic**, and its **Live-for-Health Seminars** in Creswell, Oregon. Pilots who for health reason are having trouble passing their medical should contact us. For further information or inquiries, contact: clinic1@emeraldwellness.com]*