Air and Space this Week

Item of the Week

GEORGIA ANN "TINY" BROADWICK

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The first parachute jump from an aircraft by a woman was made on **June 21**, 1913, over California. Georgia "Tiny" Broadwick jumped from a plane piloted by future airplane manufacturing magnate Glenn Martin. Her story, and that of the early parachute pioneers, is a particularly important, if little known, part of aviation history. The parachute has saved thousands of lives, both military and civilian. Her story is also that of one small woman's big triumph over adversity.

A DIFFICULT CHILDHOOD

Georgia Ann Thompson was born on April 8, 1893, on her family's small farm in Granville County, North Carolina. She was the youngest of seven sisters, and not just the farm was small, she was, too, weighing only 3 pounds at birth. Her family nicknamed her "Tiny," which she used throughout her life. Theirs was a hardscrabble existence, and all of the Thompsons worked very hard to get by. But times were bad, and they lost the farm when Tiny was only six. Her father went to work in a cotton mill in a nearby town.

Girls often married young in those days; Tiny married at age 12, and gave birth to a daughter the next year. Her husband left her, and Tiny had to go to work at the same mill as her father, working long hours, at 40 cents a day, to support her child. OK, the dollar was worth more back then, but that was low pay even by the standards of the day.

Tiny grew to her full height by the time she was fifteen. She was significantly shorter than five feet (sources vary), and weighed only 80 pounds, but she was tough. And she was ambitious.

AVIATION INSPIRATION

Many of us have an event or two in our formative years that guided our life's path. Seeing an airplane for the first time was a common one for the pilots of both World Wars, test pilots, astronauts, and business leaders like Steven F. Udvar-Hazy. Tiny's big revelation moment came when she got a neighbor to take her to the 1907 State Fair in Raleigh to see the Johnny J. Jones Exposition Shows performance of "The Broadwicks and Their Famous French Aeronauts."

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Barnstorming fliers would find avid audiences in the 1920s, but heavier-than-air planes were less than five years old in 1907, and most people had never seen one. But ballooning was pretty well known to the public in the first decade of the 1900s, and the Jones production could draw crowds with a hot-air balloon demonstration, at least as long as they had a good gimmick to go with it. In the case of the Broadwicks, it was the spectacle of a person descending from a balloon aloft by the use of a primitive "parachute." Fabric stretched over an umbrella-like frame with a swing/seat slung underneath caught enough air for the aeronaut (French or otherwise) to make a safe descent. The show would have several balloons and a number of "drops."

Tiny was enthralled by what she saw. She was profoundly impressed by the freedom the aeronaut must have felt, and she no doubt contrasted that with the drudgery of her own life. Her life's calling was instantly apparent, and she hung around the show ground and approached John Murray (stage name: Charles Broadwick), the featured aeronaut, and told him she was "hell-bound and determined to get in the act."

Broadwick knew a good promotion angle when he saw it, and with Tiny, he saw two advantages. The balloon and drop equipment were better suited to her 80 pounds as opposed to the greater weight of himself and the other performers. More importantly, a small, child-like aeronaut would be more of an audience draw than the show presently enjoyed.

Everyone knew of the dangers involved, including Tiny. The Broadwick show had been around a few years already, and another performer, Broadwick's wife Maude, had fallen to her death in a show in 1905. But Tiny was as smitten as she was tough, and she was undeterred by the dangers ahead.

However, there were a few problems to solve before Tiny could join the show. Her parents could take care of her young daughter, especially if Tiny was able to send home more money than her mill wages, so that part of her life would be OK with her touring. But she was a single woman, still very young, and this was the Deep South 120 years ago. Unaccompanied young girls simply did not travel with unrelated older men, it just wasn't proper. Broadwick had a long visit with Tiny's parents and explained the situation, and her parents agreed to allow Tiny to tour.

Sources vary as to Tiny's exact status. Some say that Charles Broadwick legally adopted Tiny as his daughter, others are murkier on her legal status. In any case, Georgia Ann Thompson became "Tiny Broadwick," and, since nobody was complaining about the situation, Tiny joined the show.

THE PARACHUTIST

Charles Broadwick's intuition proved correct, Tiny was a big hit with his air show, especially since he had her dress like a little girl, a younger version perhaps of Mary Pickford. She was top-billed as the "Doll Girl," and she headlined a popular show that had a number of balloons and aeronauts.

Tiny's first parachute drop was at the 1908 North Carolina State Fair, one year after her lifechanging visit. She was mobbed by fairgoers, and the local press, to whom she gushed, "I tell you honey, it was the most wonderful sensation in the world!" The crowd also approved of her talking about how she could appreciate the beauty of the Earth from a new perspective and how it made her feel closer to God. She became the darling of the carnivals.

The Broadwick show did very well for the next three or so years. But aviation technology was moving forward very quickly and merely dropping from a hot air balloon was losing its public appeal. The airplane was all the rage, and Charles and Tiny knew that the act would have to change with the times.

During their tour of 1912, the Broadwick show played in Los Angeles, at the Third Dominquez Air Meet. Famous aviation figures were there, including Glenn Hammond Curtiss, Lincoln "the Master Birdman" <u>Beachley</u>, and future aviation company magnate, Glenn Martin. Tiny's stunt that day was a *double* parachute drop. She jumped from the balloon, trailing a double parachute. As she fell away from the balloon, the line attached to the balloon gondola would pull a parachute out of a bag, it would open and slow her descent. Attached to her parachute was another bagged parachute, attached to the same static line as the first. She then cut away from the first chute, and fell a bit before the line pulled the second bag open, and she descended on the second parachute while the first fluttered to the ground beside her.

Her boffo double-parachute jump thrilled the crowd, and impressed the attending experts.

Parachutes were relatively new, a folded fabric canopy that lay in the cockpit. They were considered quite dangerous even though one had saved the life of Albert Berry over St. Louis a little earlier. Glenn Curtiss said he would instruct his pilots to shun the parachute concept and stay with their aircraft; he felt the latter was the safer route. Other barnstorming aviators agreed, saying that even carrying a parachute bespoke an unmanly lack of trust in one's equipment and flying ability. But Glenn Martin looked at the parachute concept differently.

Martin's interest was not just in flying and building airplanes, he also wanted to promote aviation and his nascent company via air shows. Dropping from a balloon was "old hat," but what about dropping from an airplane? He asked Tiny if she would give that a try. She immediately jumped at the chance (sorry).

Dropping from a quickly-moving airplane was very different from dropping from a stationary balloon. Charles came up with a refinement of the idea of using a folded fabric that would unfurl at the top of the drop, as used in the balloon drop demonstration, but be packed in a protective bag (he called it a "coat bag" because that is what it resembled) and be strong enough to withstand the shock of opening at speed. A trap seat was installed on the side of Martin's plane where Tiny could sit until she pulled the drop lever. A folded shroud of silk (which had the necessary strength and light weight) was in the bag attached to the plane on a shelf above her. When she dropped, the bag would follow, the line to the plane would rip the bag open, and the silk would be pulled out and unfurl, and she'd land safely.

[Aside: Glenn Martin would file a patent on Broadwick's parachute pack design in 1914, and would claim he was the sole inventor. Charles acquiesced, apparently figuring that being on Martin's good side, with his fame and growing wealth, was more important than claiming

Copyright 2022 by Steven H. Williams Non-commercial educational use allowed priority on the invention. Tiny set the record straight when asked about the issue years later, stating the parachute pack was purely the invention of Charles Broadwick, and that Glenn Martin didn't know anything about a parachute design and development. For more on this point, see the *Smithsonian Magazine* article cited in the References.]

Tiny Broadwick made the first parachute jump from an airplane by a woman from an airplane on **June 21**, 1913, falling from a plane piloted by Martin over LA's Griffith Park (some sources say she made two less-public jumps prior to the one on June 21). Two months later, Tiny garnered more attention when she jumped from a hydroplane and landed in Lake Michigan.

Tiny somehow found the time while all this was going on to get married, divorced, and married again. In spite of her fame, her life story was never fully documented, and sources do not agree on everything about her, including her actual size and her marital status.

THE MILITARY

Flying was very dangerous in the few years prior to WWI. There was no way for a pilot to escape a plane that suffered some sort of damage or malfunction in flight, and many died as a consequence. The Army was interested in aircraft for military operations, and foresaw that "damage in flight" could become even more common for their planes in the coming years. They approached Tiny and Glenn and asked for a demonstration so they could assess the military potential of the parachute pack. Tiny made four demonstration jumps in 1914. She made successful drops on the first three, but her static line became entangled in the tail assembly of Martin's plane on the fourth. Wind forces prevented her from getting back to the airplane. Her parachuting experience and internal strength kept her from panic, and she coolly pulled out a knife and cut the static line. She held on to the stub of the line as she fell freely away, and then pulled it hard, opening the bag and releasing the parachute. She had made the first free-fall parachute jump in history!

Further demonstrations of the potential value of the parachute followed, and the parachute became known as the "life preserver of the air." The Army ordered two Broadwick parachute packs for further study, but shelved the idea. Another aerial showman, Leo Stevens, took Tiny's inspired improvisational knifework and made a parachute pack with the first ripcord, but the Army didn't bite on his model either. That is, until WWI began and American pilots took notice of German pilots using a parachute to escape their burning airplanes. By the time the brass got on board, the War was over.

Parachute development continued piecemeal after the War. Finally, a group of civilians under the supervision of an Army Major acquired as many of the parachutes then in use as they could, for the purpose of using the appropriate characteristics of each to build a military-worthy parachute design. They chose Broadwick's parachute pack concept, activated by Stevens' ripcord, and the addition of a spring-loaded pilot chute to help the parachute deploy from the bag when the ripcord was pulled; similar to modern parachutes. The combined design, "Airplane Parachute Type-A," produced immediate results, saving a number of pilots before WWII, including Harold Harris, the first ever saved thus, in 1922; famed test pilot John Macready (see <u>here</u>); and a young air mail pilot named Charles Lindbergh. Since the parachutes

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they used were made of silk, Harris and some of the others saved by their chutes formed the "Caterpillar Club," still in existence. Membership is restricted to those pilots whose lives were saved by their parachutes (even though nylon replaced silk long ago).

Charles and Tiny would part ways before WWI broke out, with Georgia retaining "Tiny Broadwick" as her "stage name." Charles stayed in California, worked on improving the parachute, and continued barnstorming. A young starlet, Ethel Knutsen, became his star parachutist, and his wife. On February 12, 1920, Ethel was testing one of Broadwick's design innovations, but her lines tangled and she fell 2000 feet, suffering mortal injuries but not immediate death on impact. Broadwick was a broken man. He continued to tinker with parachute concepts, including one for a damaged aircraft rather than the pilot, an idea that recently came to fruition with the <u>Whole Plane Parachute</u>, effectively used on smaller sport aircraft, but his days were done, and he died in 1943.

Tiny's parachuting days were over, too. Her last jump was in 1922. Her 1100+ jumps had wreaked havoc with her small body, especially her ankles, and she dropped out of public view. She hated to stop, lamenting that "I breathe so much better up there, and it's so peaceful being that near to God."

RECOGNITION

Tiny might be forgotten, at least by the general public, and she might have stayed way. But in 1964, she donated an original Broadwick "coat pack" parachute she had kept to the Smithsonian National Air Museum (NAM would become the National Air and Space Museum in 1966). Only two other original Broadwick coat packs survive.

Her contribution to the Smithsonian, combined with the parachute saving thousands of airmen in WWII and later, brought her some appropriate attention and credit. She was described by one expert as "one of those leading pioneers who used practical experience and technical expertise... to advance the development of a life-saving parachute." She and Charles both deserve credit for the static line mechanism for parachute deployment. [NOTE: I know of this first-hand. Back in the day, I made a total of five static-line jumps – and five more free falls. So I thank you, Charles and Tiny!]

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