

This monthly article highlights one of our branch members. We hope that you enjoy knowing a little more about your fellow members and the interesting life they have had. If you have someone you would like to nominate or if you would like to help author an article, please email the editor, Ron Nakamoto, at [ron.nakamoto\(at\)yahoo.com](mailto:ron.nakamoto(at)yahoo.com).

Capp Spindt — Member



Are cartoon characters mimicked after real life people or is the opposite true?

In the case of Capp Spindt it may very well be the latter as he states that his first internship was based on how similar he looked like “Steve Canyon”, the fictional cartoon character. *(Editors note: Steve Canyon was an American adventure comic strip by writer-artist Milton Caniff which ran from January 12, 1947 until June 4, 1988, shortly after Caniff’s death. Steve Canyon was an easygoing adventurer with a soft heart. Originally a veteran running his own air- transport business, the character returned to the U.S. Air Force during the Korean War and stayed in the military for the remainder of the strip’s run.)*

Here is “...the rest of the story.” After finishing his Air Force service as a fighter pilot, Capp went back to finish his EE degree at San Jose State University in 1959. While in school he applied for a summer internship at Stanford Research Institute (SRI) and ended up being interviewed by the visionary genius Ken Shoulders. He was hired over other candidates from MIT and Stanford. After getting the job and working with his supervisor for a period, Capp found out that Shoulders was a rabid aviation buff and hired him because he had been a fighter pilot and looked like the famed fictional cartoon character. *(Editors note: Ken Shoulders was an experimental physicist and inventor. He was known for various works related to the field of energy and has also been credited as an early pioneer of electron beam lithography which has become a key mask-making technology for modern microelectronics. He has also been referred to as the ‘Father of Vacuum Microelectronics’.)*



“ THERE IS A RESEMBLANCE!

Capp was born in San Jose but raised in the farming community of Los Banos, where his father was the Superintendent of Schools and Principal of the Los Banos high

school. As a youngster he was an avid model airplane builder and amateur photographer who developed his own photos. During World War II with the severe manpower shortage, he worked in the fields with other kids picking cotton, tomatoes, apricots and cantaloupes and worked in the packing sheds. (*Editor's note: During that period the packers were local youngsters and refugees from the 30s's Dust Bowl dubbed "Okies" (the Mexican migration had not yet occurred.)*) As a typical American teen, Capp played all sports in high school and was captain of the basketball team and a starter both ways on the football team. The football team went undefeated for his Junior and Senior years and scored 289 points to the opponents 6 in his senior year. He also served as student body president in his senior year. After graduating from high school he enrolled at the University of California, Berkeley in architecture.

As life unfolded, the Korean War broke out. As soon as he was old enough, he left school and volunteered for pilot training. Unfortunately (or fortunately depending on your perspective) the war ended just as he earned his "wings". Capp finished in the top 5% of his class so earned the right to pick what he wanted to fly. He chose the F-86D Sabrejet. (*Editors note: The F-86D was the newest all weather fighter interceptor version of the F-86 day fighter used late in the Korean War and later became the principal Air Force fighter jet. The F-86D was the first fighter jet fitted with an afterburner, and held the world's speed record of 693 mph for operational aircraft in straight and level flight at the time and was also the first operational aircraft capable of breaking the sound barrier.)* On his second flight in the F-86D Capp experienced breaking the sound barrier (768 mph) by climbing 30,000 ft. and diving straight down with full afterburner. He could not hear the "bang" but did experience the odd sensation of "floating out of his seat" when the aircraft slowed as it encountered denser air during the decent. This sensation was a clear message to immediately pull out of the dive.

Following his service in the Air Force and now working as an intern at SRI, Capp was a natural in the research area receiving compliments from his boss, such as "... his best feature was that he wasn't handicapped with a higher education." More than once he had been interrupted by his boss telling him that an idea he was describing wouldn't work before he could finish saying how well it *had worked*. Now, fifty-five years later Capp is still working part time in an Emeritus position in the same group and with the sametechnology.

You see, Capp is one of the foremost experts in nanofabrication tools and technology as applied to vacuum micro and nano devices. He is credited with inventing the "Spindt cathode", a cold cathode based on the phenomena of field emission of electrons from metals when subjected to fields of the order of 10 million volts per centimeter. He developed means for fabricating microstructures capable of producing the huge electric fields required for field electron emission with less that 100 volts. His invention has been applied to flat panel displays, travelling wave tubes, cold ionizers for mass spectrometers and as plasma contactors for charge management on satellites. Capp is the author of 18 patents to date. (*Editors note: Yes, he is probably still generating more.*) While in a Vacuum Microelectronics Program Director's position at SRI, Capp co-founded the International Vacuum Nanoelectronics Conference in 1988 with a colleague from the Naval Research Labs. The conference brought attention to the technology, and articles featuring Capp's work appeared in many publications. Last year it was in held in

Switzerland and this year it will be in China. He is still active on the steering committee for the conference.

Capp was married for thirty years and has two children. His daughter lives in Seattle with her husband who works for the National Oceanic Atmospheric Agency and has two teenage daughters. She also runs her own jewelry business. His son has two daughters and one son and lives in Menlo Park. His son has a PhD in Applied Physics and is the Director of Research for a Silicon Valley start-up company.

Today, Capp still goes to the office and helps mentor the new interns. When he is not in the office, you will find him on the golf course swinging away at a golf ball, which he knows, is about 1.68 inches in diameter and shaped with about 300-500 dimples. He has worked out the aerodynamics of the ball, his golf club speed, angle of attack and knows the travel speed of a well-hit ball is about 200 km/h. Unfortunately after his SRI Golf Club Championship at Seascapes in 1965 he has been hard pressed to again duplicate that magnificent achievement. But ... he is still at it along with all his other golf buddies trying to re-create that perfect swing. His message to his fellow SIR members: "The fun and camaraderie of the golf club is wonderful and I'm sure all of the organized activities in SIR are the same way. If you haven't gotten involved in any of the activities, I strongly urge you to look into them and find new buddies and fun pastimes. And better yet, bring in new members to share in the great times."

We end the profile with a Steve Canyon quote published on Dec. 25, 1947:

"So we celebrate the holiday as we always have ...as he would want us to ...but he'd probably be mighty pleased to know that he shared our thoughts with another man who gave his life for something in which he believed ..." Remember the time the citizens of this country were openly proud to be Americans?

