

**Curtiss Atomic Marines
Operation, Castle & Wigwam
Dan Leonard
May 2005**

Dan was born in National City California. He attended school in National graduating from high school in 1951. After high school Dan entered San Diego State College and then joined the Marine Corps in May 1953. During his three years in the Corps he attended Sea School and was assigned to the USS Curtiss (AV-4). As a member to the Curtiss Marine Detachment Dan participated in thermonuclear tests in the Marshall Islands (Operation Castle) and off the coast of California (Operation WigWam). With four months remaining in his enlistment, Dan was transferred to Twentynine Palms Marine Corps Base. Five days before he was due to be separated he was promoted to Sergeant. Upon separation from active duty Dan returned to San Diego State University where he majored in physics. He married Dorothy McCollom in August 1958 and graduated from college in 1961.

Dan obtained a position as an electronic engineer and later as a project leader at the Naval Electronics Laboratory (NEL) on Point Loma and retired in September 1989. While at NEL (The name changed three times while Dan worked there and he has no idea what they are calling the place now.) he started out working in oceanographic electronic equipment and then worked on equipment used in Arctic research. During these assignments he got in a lot of sea time aboard small naval research vessels and spent a couple of months in Alaska including one six week stretch in the Eskimo village of Point Hope.

Dan then moved into Satellite Communications equipment where he developed the first shipboard Meteorological Satellite receiving station and shared two patents for circuits developed for that station. The equipment was installed on Naval Attack Carriers and provided valuable weather information needed for successful strikes against enemy forces. During the Vietnam War, Navy and Air Force pilots could evade North Vietnamese SAM missiles if they could see them launched but not if they came through the clouds. The weather satellite information was used to tell the pilots where the clouds were and this information greatly increased their chances of surviving missions. Dan led a team that developed the receiving stations and installed two of them on carriers deployed to Vietnam. He later traveled to the carriers to check on the equipment and learned how to improve the systems. While sailing on the Oriskany he learned the value of the equipment. A strike was scheduled one morning and before the planes took off the ship got a satellite pass, which showed that the target was clouded over, so the strike was diverted to a secondary target. The original target was attacked by Air Force planes that did not have access to the same weather data and they lost five planes. The next day the Oriskany planes attacked the original primary target under clear skies and all planes returned safely to the ship.

Dan remained in the field of technology development, leading a team that demonstrated the feasibility of communicating from a satellite to a submarine at operationally useful depths using a laser communications link. He later became a technology program manager for Navy Command Control and Communications systems at the Lab and from there was asked to become program manager for all Marine Corps Command Control, Communications and Surveillance technology. During all of his work as a civilian engineer Dan was treated as an officer when he went aboard ship or visited any military base. He found that this was quite different from the way he lived as an enlisted Marine.

During the years that Dan worked for the Marine Corps he managed the development of much of the technology that was later used in the first Gulf war and in the present Iraqi war. For two of those years he worked for General Alfred M. Gray who later became Commandant of the Marine Corps. General Gray was an extremely inspiring leader whose highest complement was that a person's work was "marginally acceptable" and Dan still uses that phrase occasionally today. A great part of Dan's work during those years was to talk to Marines about how they did their job and what they needed to make it safer for them and then seek out technology that could be developed to lead to better systems for the Corps. Once a technology was identified he had to find someone to do the development work and put together an acceptable program for the work. It was challenging work and a great deal of fun. Some of the technologies that were investigated under Dan's management of Marine Corps work included low probability of intercept communications, satellite communications, seismic surveillance robotic systems, ultra violet communications systems, laser communications systems, fault tolerant computer technology, and fiber optic communications to name only a few. It was a very interesting job. After seven years with the Marine Corps, Dan was asked to lead a set of field experiments in the Arctic and deciding that he had done about as much damage to the Marine Corps as he could he accepted the assignment. This led to two field experiments on the Arctic ice pack in 1986 and 1988 and several related experiments on naval vessels off the coast of California during the same period.

In 1989 Dan retired from Civil Service did some consulting work and then accepted a position as Director of the Defense Conversion Center at SDSU where displaced defense workers were retrained for commercial work. The transition to a university culture from military culture was not easy for either Dan or the professors that he worked with. The program trained older engineers to work in new technologies such as digital communications, Geographic Information Systems, Medical Information Systems, Biotechnology and other technologies. The problem was that most of the prospective students were senior engineers in the defense industry and they no longer did hands on technology work so that their skills were badly out of date. San Diego State University professors were able to develop short courses in newer engineering fields that offered jobs in the San Diego area and teach the newer skills the older

engineers. During this work, Dan never welcomed a new group of engineers to the program without seeing at least one individual that he had known during his career as a Navy engineer. Over 85% of these engineers were able to find new jobs and succeed in their new fields. Dan finally retired from this work in 1998 and has enjoys his present duty assignment immensely.

The Leonard's have two daughters and two grandchildren. They enjoy traveling and are heavily involved with Mission Trails Regional Park and church work. Dan traveled to Uganda and South Sudan in 2003 as part of his church work and realized how fortunate we all are to have been born in America. Upon his return he was able to raise over \$9,000 for education of South Sudanese children living in refugee camps in Uganda and to purchase medical supplies and equipment for those camps. Dorothy also does volunteer work for the City of San Diego and the San Diego Unified School District. Two of Dan's favorite pastimes are spending time with his grandchildren and getting together in person and by e-mail with marines he served with so many years ago.